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NEED FOR RESEARCH IN THE TREATMENT OF EPIDERMOPHYTOSES *

JAMES HERBERT MITCHELL, M.D.
CHICAGO

Cultural studies of the pathogenic fungi have offered so much of interest and promise that other phases of the epidermophytoses have been relatively neglected. I do not minimize the importance of determinative mycology, nor would I suggest that it give way to other investigation; but it is evident to many dermatologists that our present methods of treatment are far from satisfactory.

During the past decade widespread interest in the fungous infections has been stimulated by an ever increasing number of papers on the subject from all parts of the civilized world, and by an ever increasing number of clinical cases, both in public and in private practice. Very little attention, however, has been devoted to the purely therapeutic side of the question. It is a noteworthy fact that the first intensive laboratory attack on the problem was made in this country by Schamberg and Kolmer,[1] who determined the fungicidal and fungistatic properties of various drugs and chemicals. Another valuable contribution to the subject was made by Myers and Thienes,[2] and from these studies came their formula for the alcoholic solution of cinnamon oil and thymol, which in my experience has been a very valuable preparation. More recently Lortat-Jacob and Bidault [3] have studied the fungicidal and fungistatic properties of chinosol on both the fungi of frozen meat and some of the pathogenic fungi. They found that in a dilution as high as 1:25,000 the saprophytic organisms were restrained but not killed. The pathogenic fungi were more easily restrained and were killed in dilutions of 1:400 after twelve hours, with the exception of *E. inguinale*. Lesions produced by the latter organism, however, readily yielded to the following formula:

Chinosol	5 to 1
Alcohol (90 per cent)	50
Glycerin	20
Water	150

Dissolve the drug in the water and add the alcohol and glycerin.

The authors find that this preparation is especially valuable in protecting the normal skin from invasion by the parasite.

Those of us who attended the annual meeting of the American Dermatological Association last week had the good fortune to hear the paper by Dr. Kingery, and now we are about to have another contribution to the treatment by Dr. Sharlit and Dr. Highman. The appearance in the dermatologic literature of these papers on researches in therapeusis is one of the most promising indications of the trend of mycotic investigation.

The absence of any method of treatment of the superficial mycoses giving uniformly satisfactory results was well brought out by the symposium on the subject at the annual meeting of the American Dermatological Association in 1926. Charles J. White,[4] discussing the clinical aspects and treatment, said that "the local treatment of this disease has proved most disappointing and disconcerting to the patient and to the physician, and this statement is equally applicable in England, France and America. The Englishman has relied on Whitfield's ointment, the Frenchman on tincture of iodine and on chrysarobin, and the Americans have tried many things, and all in all have failed. The possible duration of the disease up to thirty years seems to corroborate this pessimism."

This pessimistic view is quite generally shared by the dermatologists of the United States, but not by all men in other departments of medicine. In reply to a communication from a committee of the Chicago Dermatological Society urging investigation of the fungous diseases, Surgeon General Cumming said: "In the meantime it has been our impression that the improved methods of treatment have reduced considerably the seriousness of the situation." It is an interesting fact that in the Middle West, at least, the more common manifestations of mycotic infection of the hands and feet are readily recognized by men in general practice, but only one method of treatment, namely, Whitfield's ointment, seems to be generally known to them. As an example of this, I have a patient under observation who had been treated for six months with this ointment. There was a history of mild infection, but with constant daily use of the ointment a dermatitis had been set up which gradually ascended bilaterally to the knees. Finally, when the patient complained of not making progress he was told that that ointment was the recognized treatment for ringworm of the toes, and if he failed to recover it was his own fault. Physicians, knowing that ringworm usually manifests itself as a vesicular eruption, assume that all vesicular eruptions are therefore mycotic, much to the discomfort of the patient and the discomfiture of the physician.

The importance of diagnosis in the treatment of the intertriginous mycoses cannot be overstressed. In 1919

* Chairman's address, read before the Section on Dermatology and Syphilology at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 18, 1927.

1. Schamberg, J. F., and Kolmer, J. A.: Studies in the Chemotherapy of Fungus Infections, Arch. Dermat. & Syph. **6**: 746 (Dec.) 1922.
2. Myers, H. B., and Thienes, C. H.: The Fungicidal Activity of Certain Volatile Oils and Stearoptens, J. A. M. A. **84**: 1985-1986 (June 27) 1925.
3. Lortat-Jacob and Bidault: Bull. Soc. Dermat. & Syph., December, 1926, p. 719.
4. White, C. J.: Fungus Diseases of the Skin, Arch. Dermat. & Syph. **15**: 398 (April) 1927.

C. J. White [5] reported a series of 192 epidermophyton infections on various parts of the body without microscopic demonstration of the organism. Recently [6] he has said that the organism need not be found before making the diagnosis. An experienced observer like Dr. White may well be able to dispense with the microscope, especially in the chronic, macerated conditions about the toes; but the attempts of the inexperienced clinician to do so may be followed by disaster. Eczematoid ringworm has now become such a common disorder, and so many physicians are treating it that I am of the belief that we should impress on medical students the importance of firmly establishing the diagnosis by microscopic examination before beginning active fungicidal treatment. In fact, I am of the opinion that, if we are to make further progress in the management of this group of infections, we should make not only routine microscopic examinations but routine cultures as well. Otherwise, how are we to settle such a moot point as that of dyshidrosis, the existence of which has been denied by Darier and Eliascheff [7] on microscopic examination alone, by Pinkus and others, and ably defended recently by Keller,[8] who insists that there are undoubtedly eruptions occurring in hot weather on the extremities of persons doing violent exercises, which clear in a few days without leaving a trace? A significant fact is pointed out by Keller in that the vesicle content in such cases is acid. Or how are we to settle the question raised by Sabouraud [9] as to whether a streptococcus or a yeast is the exciting organism in certain forms of intertriginous inflammations of the natural folds of the body? Or how are we to make a diagnosis of the sporothrices, the organisms of which, as a rule, cannot be found by direct microscopic examination? This last question has recently assumed importance in view of the fact that Benedek [10] has reported a case of sporotrichosis purely epidermal in character and having the appearance of superficial ringworm.

The complexity of the clinical manifestations of the superficial mycoses is growing day by day. In his early writings Sabouraud taught that a given fungus produced more or less constant clinical symptoms; that not only was eczema marginatum always due to *E. inguinale*, but that most of the hand and foot cases likewise were produced by that fungus. He further maintained that a given fungus grown on his proof medium would always appear the same.

All three of these postulates of Sabouraud are now giving way to the rapidly accumulating mass of investigative data. The marked variations in the clinical manifestations and the virulence of a given strain are well demonstrated by a series of cases reported by Rosenbaum.[11] A 10 year old child with a few insignificant scaling lesions on the face infected the laboratory assistant, who promptly developed severe, deep-seated kerion lesions in the bearded region, which resisted treatment and continued to recur for months. In sharp contrast, his wife acquired from him a few superficial scaling lesions which yielded to an application of iodine. In all three cases, *T. gypseum-granulosum* was grown. The same author reports another series of cases consisting of a mother, a 10 year old daughter and an infant. The mother was first treated for a coin-sized patch back of the ear. Later the child appeared with deeply infiltrated hand-sized lesions on the thighs and legs, and still later the infant was seen with a generalized superficial eruption having the clinical appearance of eczema marginatum. The fungus in this group was found to be *T. gypseum-asteroides*. At the same clinic of Buschke in Berlin, Harry [12] observed three cases of ringworm of the scalp due to *T. rosaceum*, and a case of typical eczema marginatum in a 4 months old infant produced by *T. gypseum-asteroides*.

Kauffmann-Wolff was one of the first to demonstrate that *E. inguinale* was not the common but the occasional exciting organism. My own [13] observations agreed in the main with hers, both as to the comparative rarity of *E. inguinale* and as to the frequency of the Kauffmann-Wolff organism, which is regarded by some as a pleomorphic form of that fungus. Ballagi,[14] in a series of 800 cultures of fungi in Budapest, grew *E. inguinale* sixty-three times. Most of the infections resulted from hot dressings in hospitals, and only four times was it grown from hand and foot cases. Keller,[8] in a series of thirty-five cases of hand and foot infections, grew *E. inguinale* only once, as against twelve cultures of the Kauffmann-Wolff organism and fourteen cultures of blastomycetic organisms. *E. inguinale*, however, may do the most unexpected things, as, for example, invade the nail in the unique case reported by Brünaur,[15] or produce an eruption on the body and in the scalp having all the characteristics of pityriasis rosea, and being clinically indistinguishable from that disorder, as in the case observed by Arzt and Fuhs.[16] Such cases as these emphasize the importance of routine cultures.

The third postulate of Sabouraud concerning the constancy of cultural characteristics has come to be doubted by various investigators. The most important step in proving or disproving it consists in the elaboration of a proof medium on a chemical basis which can be duplicated at will in any part of the world. Marked variation in cultural characteristics of a given strain may occur, however, when grown on a constant medium. Weidman [17] has shown that a fungus from cultures regularly taken of his toes for years suddenly changed in characteristics amounting almost to mutation. Keller [8] has found similar variations in the Kauffmann-Wolff organism and other fungi and suggests that cultural characteristics may be greatly modified by changed conditions, such as sweating of the part from which the culture is made. He also warns against accepting new species on insufficient evidence, and is inclined to minimize the pathogenic rôle played by fungi, especially the yeasts. He points to the rapid involution of experimentally produced yeast infection in the absence of treatment in contrast to the rebelliousness to treatment of acquired infections.

Before the treatment of the superficial mycoses can be put on a scientific basis, this last question raised by Keller must be answered. Ten years ago there were many dermatologists who were skeptical of the pathogenicity of the fungi in the hand and foot infections,

5. White, C. J.: J. Cutan. Dis. **37**: 513, 1919.
6. White, C. J., in discussion on Williams, C. M.: The Enlarging Conception of Dermatophytosis, Arch. Dermat. & Syph. **15**: 467 (April) 1927.
7. Darier and Eliascheff: Lancet **2**: 578 (Sept.) 1919.
8. Keller: Dermat. Ztschr. **49**: 33, 1926.
9. Sabouraud: Ann. de dermat. et syph., July, 1923, p. 425.
10. Benedek: Dermat. Wchnschr. **83**: 1696, 1926.
11. Rosenbaum: Dermat. Wchnschr. **78**: 99 (Jan. 26) 1924.
12. Harry: Dermat. Wchnschr. **76**: 500, 1923.
13. Ormsby, O. S., and Mitchell, J. H.: Ringworm of Hands and Feet, J. A. M. A. **67**: 711 (Sept. 2) 1916. Mitchell, J. H.: Further Studies on Ringworm of the Hands and Feet, Arch. Dermat. & Syph. **5**: 174 (Feb.) 1922.
14. Ballagi, S.: Dermat. Wchnschr. **83**: 1155 (Aug. 7) 1926.
15. Brünaur: Dermat. Ztschr. **38**: 148, 1927.
16. Arzt and Fuhs: Dermat. Ztschr. **41**: 97, 1924.
17. Weidman, F. D.: Morphologic Variations in a Ringworm Species of the Toes, Arch. Dermat. & Syph. **13**: 374 (March) 1926.

and I well remember being called on repeatedly by Dr. William Allen Pusey and others in discussion of the subject to defend my belief. Later, however, the skeptics were all converted, and so thoroughly that the dominant therapeutic idea became one of applying active fungicidal agents, with the result that the epidermophytoses have been much overtreated and the nonmycotic vesicular eruptions have been much irritated.

As an aid in solution of the question of the pathogenicity of the fungi in the epidermophytoses, the various trichophytin preparations have been a disappointment. Nonspecific reactions are frequent enough to cast doubt on the value of the tests. Rajka [18] observed a sharp local reaction by the injection of a preparation made from trichophytin in a case of "Sommerschuppung," or superficial scaling of the palms described by Wende [19] as keratosis exfoliativa, and more recently by Porosz [20] as dishidrosis sicca lamellosa. A local reaction to a preparation made from trichophytin satisfied Leszszyosky [21] that he was dealing with a fungous conjunctivitis, notwithstanding the fact that he was unable to find any other evidence of fungi. In a case of acute conjunctivitis that I saw recently, budding organisms were plentiful in both stained and unstained preparations, and no test was needed to fix the diagnosis.

Among the diagnostic errors and consequent therapeutic failures may be mentioned the treatment as ringworm of acquired keratoses of the palms and soles. The keratolytic action of Whitfield's ointment, together with the roentgen ray, will usually cure the disorder, but the ointment alone will not. Another diagnostic error frequently encountered is the application of Whitfield's ointment to occupational and external irritant dermatoses. I have recently seen an extensive occupational dermatitis which had been aggravated for six months by applications of Whitfield's ointment, and also two cases of primrose dermatitis, one of which had been treated with tincture of iodine and the other with the ointment. In all such cases I have been told by the patient that the diagnosis had been made without the use of the microscope.

High in the list of therapeutic failure stands the conversion, by overtreatment, of a mild ringworm infection into a chronic dermatitis. In an individual who has a sensitive skin and bacteriophobia this is particularly likely to occur. The patient's desire for a cure tempts him to disobey instructions and to indulge in therapeutic excesses. The transition is difficult to detect, but even when recognized is difficult to treat. It is in this type of case that I have found soothing ointments and radiotherapy to be of the greatest value.

A search of the literature of the last three years has disclosed very few new suggestions for treatment, and most of these are for ringworm of the scalp. The use of 10 per cent antimony and potassium tartrate salve in sharply localized microsporon infection of the scalp, first suggested by Oppenheim [22] and advocated by Steiner [23] and von Berde,[24] apparently has not been used in superficial ringworm.

The method of treatment for lupus erythematodes, utilizing the well known irritant reaction between iodine and ammoniated mercury advocated by Hauck,[25] has been found by Sachs [26] to be very efficient, in ringworm both of the scalp and of the glabrous skin. C. J. White [27] says that a 2 per cent solution of mercurochrome-220 soluble is proving far more effective than any drug he has employed before. Weidman [28] has made some interesting observations on the inhibiting action of a yeast when mixed with *E. cruris* and planted on culture mediums. This offers a field of investigation well worth exploring. Even more interesting were the experiments he carried out on the common pathogens, both in culture material and in tissue, to determine the thermal death point, which was found to lie between 48 and 51 C., a temperature well within the limit of human tolerance. In an extensive report of the mycoses of Madagascar, Fontoynont and Boucher [29] observed a severe *Cryptococcus mena* (pink) infection which resisted potassium iodide internally, but which yielded to 0.10 Gm. daily of methylene blue internally and the daily external application of a 1 per cent solution of the same drug. An interesting feature of this treatment was the fact that until after the administration of methylene blue the blood serum of patients infected by the cryptococcus did not agglutinate the organism. For *Sporothrix beurmanni* infection they found the Ravaut [30] method of intravenous injection of diluted compound solution of iodine to be superior to any other. The alcoholic solution of cinnamon oil and thymol elaborated by Myers and Thienes [2] is a most effective preparation. It is penetrating, cleanly and easily applied, and does not produce unsightly stains. In my private practice I have found it more satisfactory than Whitfield's ointment. The trichophytin preparations appear to be of no greater value therapeutically than they are for diagnostic purposes. Autogenous vaccines, likewise, have failed to come up to our expectations.

A more extensive and intensive search of the recent literature would probably make substantial additions to the foregoing list, but as it stands it is not very imposing. The future holds much of promise, however, and with such men as Myers, Thienes, Kingery, Highman, Sharlit and Weidman vigorously attacking the problem, inevitably there will be forthcoming the most valuable results, not only as regards their actual contributions to the treatment but also as regards the stimulation of interest in other workers.

25 East Washington Street.

18. Rajka, E.: Dermat. Wchnschr. (supp.) **79:** 1252 (Oct. 22) 1924.
19. Wende, G. W.: J. Cutan. Dis. **37:** 174 (March) 1919.
20. Porosz: Dermat. Wchnschr. **78:** 216, 1923.
21. Leszszyosky: Ann. de dermat. et syph., 1923, p. 536.
22. Oppenheim: Dermat. Wchnschr., 1920, number 3, cited by Steiner (footnote 23).
23. Steiner, E.: Dermat. Wchnschr. **80:** 51 (Jan. 10) 1925.
24. Von Berde, K.: Dermat. Wchnschr. **81:** 1263, 1925.
25. Hauck: München. med. Wchnschr. **70:** 1482, 1923.
26. Sachs, O.: Dermat. Wchnschr. **78:** 165 (Feb. 9) 1924.
27. White, C. J.: Fungus Diseases of the Skin, Arch. Dermat. & Syph. **15:** 400 (April) 1927.
28. Weidman, F. D.: Laboratory Aspects of Epidermophytosis, Arch. Dermat. & Syph. **15:** 448 (April) 1927.
29. Fontoynont and Boucher: Ann. de dermat. et syph. **4:** 209, 1923.
30. Ravaut: Ann de dermat. et syph., May, 1921.

Rate of Biologic Change.—The question, "What is the rate of biological change?" is so simplified that it may never be possible to answer in as simple a manner. The rate of biological change may be very rapid at one time and very slow at another. Or it may be rapid in one species and slow in another. Or, again, only one part of the bodily mechanism may be undergoing change and the other parts remain stable, except so far as internal readjustments may be occasioned. And then of course it will be difficult to express rates of biological change in measurable and comparable units. All these difficulties, particularly in the light of the present data, mean that the most that can be expected from an inquiry into the rate of biological change will necessarily be quite general. But it should be remembered that the purpose for which this knowledge is wanted in the present discussion is to make comparisons of the rapidity of change in man with the rapidity of cultural changes. Biological changes are slow as seen against the span of human life.—Ogburn: Social Change, pp. 123-124.

BISMUTH IN THE TREATMENT OF CONGENITAL SYPHILIS *

CARROLL S. WRIGHT, M.D.
Associate Professor of Dermatology and Syphilology, University of Pennsylvania Graduate School of Medicine
PHILADELPHIA

Since its introduction in the treatment of syphilis in 1921 by Sazerac and Leviditi, bismuth has been generally accepted as an antisyphilitic remedy of unquestionable merit. Laboratory experimentation and clinical trial have proved that bismuth is superior to mercury both therapeutically and from the standpoint of toxicity. It is only natural that a drug which has proved to be of such distinct value in acquired syphilis should be employed in congenital syphilis, that refractory offspring of the parent disease. It is strange, however, that the literature contains only scant reference to the value of bismuth in congenital syphilis.

Among the first to report his experience with the use of bismuth in congenital syphilis was Müller,[1] who treated six cases in 1922 and found a good symptomatic response without toxic symptoms. In the following year Cajal and Spierer [2] reported the treatment of eight cases with a bismuth tartrate preparation, and stated that it had a therapeutic action on active manifestations more rapid than that of mercury and as rapid as that of the arsphenamines. Splenic enlargement was observed to disappear more quickly after bismuth than when mercury or arsphenamine were used. Untoward effects were never observed. Genoese and Mazzacuva [3] studied the effects of bismuth in congenital syphilis, using a water soluble preparation (potassium sodium bismuthotartrate), and later a colloidal bismuth. Moderately large doses were employed and the authors found that bismuth, while slightly less active than the arsphenamines, never failed to give good results, while in their experience the arsphenamines and mercury occasionally failed entirely.

A suspension of bismuth salts in an oil was employed by Török.[4] In his experience bismuth proved to be a more satisfactory drug than either mercury or the arsphenamines from the standpoint of ease of administration and its lowered toxicity in therapeutic doses. Stoye [5] reported a distinct superiority for bismuth over mercury, as did Seltzer and Levy,[6] who found that its action on cutaneous manifestations was more rapid than that of mercury. Dissenting opinions as to the value of bismuth in congenital syphilis are offered by Pinard [7] and Frank,[8] Pinard asserting that bismuth is not well borne by children and that it often causes anemia, emaciation and lassitude, and Frank, though reporting a favorable therapeutic value for bismuth, believing that the drug too often produces toxic symptoms in children. In his own series of twelve cases, Frank had one death following treatment with bismuth.

The majority of these reports are based on a small number of cases. I have undertaken the present study because of the opportunity to observe the effects of the drug in a comparatively large number of cases of congenital syphilis. In a previous study [9] of 160 cases of syphilis comprising all stages of the disease, which were treated with one or several courses of bismuth, I was struck with the remarkable influence of the drug in sixteen cases of congenital syphilis.

Table 1, which was first published in my previous study, is reproduced here in full for the purpose of later comparisons and as a matter of interest in showing the effect of bismuth in other types of syphilis. It will be observed that nine out of sixteen patients with congenital syphilis, all with strongly positive Wassermann reactions at the beginning of bismuth therapy, gave negative Wassermann reactions after having failed entirely to respond to an average of eighteen doses of neoarsphenamine and eight injections of mercury. A hope of finding in bismuth the utopian remedy for the treatment of this refractory type of syphilis has not been entirely fulfilled by the study of a larger series of cases, although the advantages of the drug are many and its position as an adjunctive remedy seems definitely established. Certainly, in its effect on the serologic reaction, neoarsphenamine appears to be less valuable than bismuth in congenital syphilis.

TABLE 1.—*Effect of Bismuth on Various Types of Syphilis*

	Diagnosis					
	Secondary Syphilis	Latent Syphilis	Tertiary Syphilis, Cutaneous	Tertiary Cerebrospinal Syphilis	Secondary Visceral Syphilis	Congenital Syphilis
Number of cases	9	75	11	14	3	16
Neoarsphenamine doses, average	19	17	19	20	12	18
Mercury doses, average	..	7	5	9	6	8
Wassermann negative after foregoing	6	18	1	..	1	..
After foregoing, per cent negative	60	22.5	9	..	33	..
Remaining negative under bismuth, per cent	100	100	100	..	100	..
Cases positive at start of bismuth	4	57	10	14	2	16
Negative after bismuth	4	32	4	3	..	9
Made negative by bismuth, per cent	100	51	40	20	..	56
Injections of bismuth to obtain negative Wassermann, average	10	13	16	17	..	17
Cases reverting to positive	..	5	2	2	..	1
Cases unaffected by all treatment	..	23	6	11	2	7

As in the previous study, potassium bismuth tartrate [10] was used, the dose being regulated according to body weight, since bismuth, like other antisyphilitic remedies, is tolerated in a larger dose per kilogram of body weight by infants than it is by adults. It was ascertained that a dose of 5 mg. per kilogram was well tolerated, although in older children the dose never exceeded a total of 100 mg., which was found to keep the body at the point of saturation as evidenced by a blue line along the gum margin. The drug was administered only by intramuscular injection, a needle an inch and a half long and 22 gage being used and inserted to a depth just sufficient to reach the deep muscles of the buttock. Injections were given in courses of sixteen, with a month's rest between, the interval between injections being one week. Including the cases reported in the previous paper, a total of fifty-four cases has been studied.

EFFECT ON CUTANEOUS MANIFESTATIONS

Since first undertaking this study, I have had the opportunity of treating only three cases of congenital syphilis presenting active cutaneous lesions. Two of

* From the clinic of Dr. Jay F. Schamberg, Polyclinic Hospital, University of Pennsylvania Graduate School of Medicine.
* Read before the Section on Dermatology and Syphilology at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 19, 1927.

1. Müller, Fritz: München. med. Wchnschr. **69:** 1659 (Dec. 1) 1922.
2. Cajal, M., and Spierer, H.: Presse méd. **31:** 354 (April 18) 1923.
3. Genoese, G., and Mazzacuva, G.: Pediatria **31:** 1081 (Oct. 15) 1923.
4. Török: Med. Klin., 1923, quoted by Frank.
5. Stoye, W.: München. med. Wchnschr. **71:** 1431 (Oct. 10) 1924.
6. Seltzer, E., and Levy, S.: Arch. f. Kinderh. **75:** 241 (March) 1925.
7. Pinard: Bull. méd. **37:** 894, 1923.
8. Frank, M.: Arch. f. Kinderh. **74:** 106 (April) 1924.
9. Wright, C. S.: Am. J. M. Sc. **173:** 232 (Feb.) 1927.
10. Drug furnished by the Dermatological Research Laboratories, Philadelphia.

these were in twins, aged 6 months, presenting bullous lesions on the palms and soles, rhagades at the angles of the mouth, and condylomas around the anus. The latter lesions, under the dark-field microscope, were found to be teeming with spirochetes. In spite of the fact that the infants weighed only about 10 pounds (4.5 Kg.) each, a 50 mg. dose of potassium bismuth tartrate was administered intramuscularly. This dose was very well tolerated, and that it was therapeutically effective was evidenced by the disappearance of spirochetes from the condylomas within forty-eight hours and the healing of the cutaneous manifestations within ten days, or five days after the injection of the second dose of 50 mg. of the drug. A third infant, aged 9 2 to 16, and averaging about ten years. All these children entered the clinic with strongly positive Wassermann reactions, as will be seen in table 2; many of them had had previous treatment with some arsenical and some of them had had mercurial injections or rubs. In all these cases it was possible to check the previous treatment fairly accurately, for these were patients who had been under treatment in the past, had lapsed and had to be brought back, or they had been referred by outside clinics with an accurate history of their previous treatment accompanying them. Only four of these forty-seven patients gave negative reactions after receiving a considerable amount of neoarsphenamine, averaging twenty doses to each of the forty-seven children,

TABLE 2.—*Cases of Late Congenital Syphilis Treated with Bismuth*

Case	Age	First Wassermann Reaction	Number of Neoarsphenamine Injections	Wassermann Reaction after Neoarsphenamine	Total Number of Bismuth Injections to Date	Effect of Bismuth on Wassermann Reaction	Comment
1. M. Ba.	5	4+	40	Strongly positive	60	Negative	
2. M. G.	16	4+	36	Strongly positive	75	Negative	Reverted to positive later
3. C. C.	9	4+	7	Moderately positive	50	4+	Kahn became negative
4. E. K.	11	4+	50	4+ positive	56	Negative	Persistently negative for past year
5. J. F.	6	4+	19	4+ positive	27	Weakly positive	Irregular visits to hospital
6. D. L.	16	4+	12	4+ positive	35	4+	Positive spinal fluid
7. J. R.	6	4+	16	4+ positive	20	4+ positive	
8. M. By.	5	4+	8	4+ positive	27	4+ positive	Kahn reduced to negative
9. D. H.	8	4+	45	4+ positive	75	Weakly positive	Kahn reduced to negative
10. J. D. G. ..	11	4+	19	4+ positive	48	Moderately positive	Kahn reduced to negative
11. R. W.	9	4+	40	4+ positive	67	Negative	Negative for 18 months
12. R. I.	9	4+	23	4+ positive	45	Negative	Negative for past year
13. J. H.	12	4+	12	4+ positive	37	4+	Tertiary lesions of the arm
14. E. V. A. ...	8	4+	16	4+ positive	32	4+	Intermittent treatment
15. S. P.	11	4+	24				
16. Z. N.	7	4+	8	4+ positive	60	4+	
17. R. M.	2	4+	0	4+ positive	22	4+	Interstitial keratitis
18. H. D. C. ..	8	4+	30	4+ positive	30	4+	Treatment irregular
19. D. F.	15	4+	7	4+ positive	32	4+	
20. F. D.	9	4+	0	4+ positive	11	Negative	
21. T. B.	8	4+	16	4+ positive	37	4+	
22. C. C.	10	4+	40	4+ positive	27	Weakly positive	Interstitial keratitis
23. B. B.	10	4+	40	Negative	60	Negative	
24. Z. B.	11	4+	8	4+	14	Negative	
25. M. B.	12	4+	50	Negative	45	Negative	
26. C. B.	12	4+	17	4+	18	Negative	
27. C. B. B. ..	10	4+	12	4+	8	Negative	Became positive after long rest
28. D. M.	14	4+	24	4+	32	4+	Given malaria inoculation
29. C. W.	12	4+	12	Moderately positive	16	Negative	Spinal fluid positive
30. F. M.	14	4+	16	Weakly positive	12	Negative	Persistently negative for more than a year
31. G. S.	14	4+	12	4+	20	Negative	Persistently negative for more than a year
32. H. G.	13	4+	16	4+	7	Negative	
33. A. T.	12	4+	12	Negative	18	Negative	
34. W. H.	12	4+	12	4+	16	4+	Transferred for malaria inoculation
35. N. F.	9	4+	16	Negative	26	Negative	
36. F. M.	10	4+	80	4+	18	Negative	
37. H. Z.	14	4+	8	4+	32	4+	
38. A. B.	8	4+	0	4+	25	Moderately positive	
39. B. Ba.	12	4+	12	4+	20	Negative	
40. V. C.	12	4+	0	4+	45	4+	
41. R. D.	7	4+	38	4+	60	Negative	
42. H. D.	11	4+	15	4+	40	Negative	
43. M. G.	13	4+	16	4+	44	Negative	
44. A. H.	8	4+	17	4+	12	Negative	
45. E. M.	14	4+	38	4+	14	4+	
46. S. P.	15	4+	21	4+	28	4+	
47. Z. V.	4	4+	0	4+	28	Negative	

months, with papular and pustular lesions over the trunk, responded promptly to a dose of 50 mg. at intervals of one week. A Herxheimer reaction was not observed in any of these three cases. It is not, however, for its effect on cutaneous manifestations that one would seek for a new remedy in congenital syphilis, for either mercury or the arsphenamines will result in prompt healing of the cutaneous manifestations in the majority of cases. It has been the experience of others that bismuth is a more active spirocheticide than mercury, Cardosa [11] and Nathan [12] having found more rapid disappearance of spirochetes from skin lesions than after mercury.

LATE CONGENITAL SYPHILIS

The majority of the cases included in this study were cases of late congenital syphilis in age periods from the usual dose being 0.3 Gm. These four received, respectively, twelve, sixteen, forty and fifty injections of neoarsphenamine before a reversal of the Wassermann reaction took place. Following the institution of treatment with bismuth, negative Wassermann reactions were obtained in twenty of the remaining forty-three cases showing positive serologic reactions after the treatment with neoarsphenamine. Although four of these cases have since shown a positive Wassermann reaction on at least one occasion, the remaining cases have remained Wassermann negative.

In the series of sixteen cases previously reported, Wassermann tests were made on each child weekly, and it was determined that in the nine cases in which the Wassermann reaction was reversed an average of sixteen injections of the drug was required to obtain the negative reaction. In the larger series of cases it was found impracticable to subject the children to weekly Wassermann tests and intramuscular injections

11. Cardosa: Klin. Wchnschr. **4**: 31, 1922.
12. Nathan, E.: München. med. Wchnschr. **71**: 647 (May 16) 1924.

each week, so tests of the blood were made monthly. Consequently, it is impossible to estimate the average amount of bismuth required to obtain the negative Wassermann reactions in the twenty cases in which the reactions were reversed.

It is of further interest that, in five cases in which the Wassermann reaction was uninfluenced by bismuth, the Kahn reaction was reversed from a positive to a negative. Stokes,[13] using arsphenamine and mercurial rubs, was able to obtain a reversal of the Wassermann reaction in 62 per cent of cases of congenital syphilis, but the treatment which induced this result was carried out over a period of three or four years. Dennie and Dwyer [14] were able to reverse the Wassermann reaction in only 40 per cent of their cases treated with intravenous arsphenamine and intramuscular mercuric chloride injections in three years. Admittedly the majority of these children had had considerable treatment before receiving any bismuth, but neoarsphenamine and mercury had had surprisingly little effect on the serologic reaction. In this series of cases, the Wassermann reaction was reversed from strongly positive to negative in 47 per cent of the cases. In view of the fact that the positive Wassermann reaction in late congenital syphilis is peculiarly resistant to treatment, this result seems favorable.

INTERSTITIAL KERATITIS

Bismuth has proved to have a particularly favorable action in the treatment of interstitial keratitis, its therapeutic effects rivaling if not surpassing those of the arsphenamines. Photophobia is relieved within a period of from two to four weeks. The end-result following treatment with bismuth is astonishingly good. Four cases of acute interstitial keratitis treated with bismuth, without any other antisyphilitic remedy, are included in this study. All these cases responded with remarkable rapidity, and by the end of the third month of treatment the process was inactive in every case. The degree of corneal clouding remaining was extremely slight and vision was good in every case. The response to bismuth appears to be as prompt as, and the end-result equal in every way to, that obtained with the arsphenamines.

UNTOWARD EFFECTS FROM BISMUTH

In the doses in which I employ it, potassium bismuth tartrate has proved to be remarkably nontoxic, which is of great value in treating children. There is very little pain connected with the injections, provided a proper technic is employed in the injections. The majority of the children enter the treatment room with a smile on their faces, and rarely do they complain the following week of any unpleasant symptoms in the interim. Immediately after the injection of the drug, the area of injection is massaged, which tends to aid in diffusion in the muscle, and as a consequence it is almost unknown for a node to develop subsequently.

Stomatitis to any degree of severity is also practically never seen. A blue line will form along the gums, but this is to be expected.

A number of the children have at times developed slight eczematoid eruptions which in all probability are due to the drug, for the eruption would disappear on cessation of the bismuth for a week or two, and reappear on reinstitution of treatment.

Anemia occurring as a result of bismuth as described by Pinard has not resulted so far as I have been able to determine from blood examinations on a number of these children. Their general health seems to improve following the repeated administration of the drug.

In only three cases has an albuminuria developed during the administration, and in these three cases there was at no time more than a trace of albumin. Two children who had developed an albuminuria following the administration of neoarsphenamine did not show any increase in the degree of albuminuria by the later administration of bismuth. It was because of the untoward effect of bismuth on the kidneys that Frank counseled against its use in congenital syphilis. The unfortunate results in his cases may have been due to the use of a more toxic preparation, or of a larger dosage.

COMMENT

The value of bismuth as an effective remedy in acquired syphilis is widely recognized at the present date. From this study, bismuth appears to be a remedy which may also be employed with great benefit in congenital syphilis. Cutaneous manifestations disappear and spirochetes are destroyed with a rapidity rivaling that of the arsphenamines, although it is known from experimental evidence and from observation of its effects that bismuth is actually inferior as a spirocheticide to the arsphenamines. In interstitial keratitis it has been my experience at the Polyclinic Hospital that bismuth appears to be a remedy equal in value to the arsphenamines. Kleefeld in France believes that bismuth is even superior to the arsphenamines in interstitial keratitis. Others have reported that bismuth acts more rapidly in reducing splenic enlargement than do the arsphenamines. From this study it would appear that bismuth exerts a more powerful action in reducing positive Wassermann reactions to negative than neoarsphenamine. However, in all fairness it must be remembered that a Wassermann reaction will often become spontaneously negative a long period after all active treatment is stopped. Also the previous neoarsphenaminizing of the children may have prepared the way for a more rapid action from the bismuth by destroying the majority of the spirochetes and leaving only a weak barrier of organisms for the bismuth to down. From the standpoint of toxicity, as determined by subjective evidence on the part of the children, bismuth is decidedly superior to mercury, being considerably less painful and rarely ever causing even the mildest toxic symptoms.

Laboratory experimentation tends to show that bismuth is a superior spirocheticide and at the same time has a lower toxicity in therapeutic doses than mercury. Hopkins [15] demonstrated that potassium and sodium

TABLE 3.—*Comparison of Therapeutic Indexes of Bismuth and Other Antisyphilitic Remedies (Hopkins)* [15]

Preparation	Curative Dose, Mg. per Kg.	Approximate Tolerated Dose, Mg. per Kg.	Approximate Therapeutic Dose
Potassium and sodium bismuth tartrate	2	75	1:37
Precipitated bismuth	4	400	1:100
Arsphenamine (intravenously)	15	100	1:7
Neoarsphenamine (intravenously)	11	300	1:30
Mercuric salicylate (intramuscularly)	15	6	2½:1

13. Stokes, J. H.: Modern Clinical Syphilology, Philadelphia, W. B. Saunders Company, 1926.

14. Dennie, C. C., and Dwyer, H. L.: The Results of Treatment of Four Hundred Cases of Congenital Syphilis, Tr. Sect. Dis. Child., A. M. A., 1924, p. 243.

15. Hopkins, J. G.: Antisyphilitic Action of Bismuth, J. A. M. A. **83**: 2087 (Dec. 27) 1924.

bismuth tartrate was tolerated intramuscularly in doses of 75 mg. per kilogram; the therapeutically active dose (the dose capable of healing lesions and effecting a disappearance of spirochetes) in rabbit syphilis was 2 mg. per kilogram. His comparison of the therapeutic index of the chief antisyphilitic remedies is given in condensed form in table 3.

Gruhzit [16] also found that a dose of 2 mg. per kilogram would kill the spirochetes in rabbit syphilis. Petkovitch-Halyetska [17] gives a table (reproduced in table 4) indicating the comparative dosage per kilogram

TABLE 4.—*Dosages Required to Sterilize Syphilized Rabbit*

Neoarsphenamine	0.015	per kilogram of body weight
Soluble bismuth	0.02	per kilogram of body weight
Calomel	0.06	per kilogram of body weight
Insoluble bismuth	0.08	per kilogram of body weight

of the main antisyphilitic remedies required to sterilize a syphilized rabbit. This table is interesting as it indicates that calomel is superior to insoluble bismuth preparations; but it must be remembered that calomel is so much more toxic as to make its use impracticable.

Milian [18] of Paris represents the spirocheticidal power of arsphenamine, bismuth and mercury as 10, 7 and 4, respectively.

Bismuth is not suggested in this presentation as the sole remedy for the treatment of congenital syphilis but as a remedy which may be used as the chief ammunition in arresting the progress of the disease in a child and bringing about clinical and serologic cure. Certainly, the arsphenamines are to be regarded as our most valuable remedy, although if only one drug was available for the treatment of congenital syphilis, I believe that bismuth would be my choice, because it can be used more constantly and indefinitely. The arsphenamines act rapidly but are excreted rapidly, and so act for only a brief period of time following each injection. They are apt to prove more toxic and, used alone, neoarsphenamine at least exerts a feebler action on the positive Wassermann reaction. Syphilologists are accepting the view that the best treatment for congenital syphilis is slow but sure treatment. It is for this type of treatment that bismuth is best adapted. It also has the advantage of building up the patient, and thus increasing the resisting power of the individual against the disease. Bismuth is a drug which, placed in the muscles of a syphilized patient, exerts a continuous action, a beneficial action, without causing any unfavorable action on the body tissues. In the congenital syphilis department of Dr. Schamberg's clinic, I am now using bismuth as the main adjunct to the arsphenamines, confining the use of the latter to one or two courses of eight injections, and then depending on the bismuth to complete the arrest of the disease.

SUMMARY

The action of bismuth in congenital syphilis was studied in fifty-four cases. The majority of these patients had had previous treatment with neoarsphenamine, and some of them had received mercurial injections. Forty-seven had late congenital syphilis, and only four of these forty-seven gave negative Wassermann reactions after an average of nearly thirty injections of neoarsphenamine. Twenty of the remaining forty-three patients with positive Wassermann reactions became Wassermann negative after a variable amount of bismuth, all but four of these being still negative at the time of the writing of this paper, and these four showing usually a single serologic relapse.

In three cases presenting cutaneous manifestations, the cutaneous lesions disappeared with rapidity and spirochetes disappeared within forty-eight hours after the administration of potassium bismuth tartrate intramuscularly in a dosage of 5 mg. per kilogram of body weight.

Four patients with an active interstitial keratitis untreated with any other antisyphilitic remedies were treated with weekly injections of bismuth and atropine locally. The results equaled those obtained with the combined arsphenamine-mercurial treatment.

Bismuth proved to be remarkably benign, being well tolerated by children of all ages and causing a surprisingly little degree of pain. Bismuth is recommended as the chief adjunct to the arsphenamines in the treatment of congenital syphilis.

1402 Spruce Street.

16. Gruhzit, O. M.: Bismuth Salicylate in Experimental Rabbit Syphilis, Arch. Dermat. & Syph. **13**: 195 (Feb.) 1926.
17. Petkovitch-Halyetska: Thesis, Paris, 1923.
18. Milian, quoted by Schamberg: Therap. Gaz., Jan. 15, 1927.

ABSTRACT OF DISCUSSION

DR. J. GARDNER HOPKINS, New York: Bismuth was introduced about four years ago, and is now recognized as an antisyphilitic drug of real value. A questionnaire was sent out by the *Medizinische Klinik* to various German clinics. Nine responded. Of these, all used arsenic in routine treatment. Five used bismuth but not mercury. Three used both bismuth and mercury. In my experiments, an insoluble preparation of bismuth, given intramuscularly, was compared with a soluble preparation of arsenic, given intravenously in a single injection. The procedure favors the insoluble drug, which may act over a long period. There have been wide differences in reported observations as to what is the spirocheticidal dose of bismuth. If 4 mg. is considered curative, one such dose can be given therapeutically at a single injection; that is, 0.25 Gm. for a man weighing 60 Kg. With neoarsphenamine, we can give about one and one-third curative doses. With mercury, we can give only one seventh of the dose which will cause spirochetes to disappear in rabbits. This indicates somewhat the spirocheticidal value of the three drugs. While their therapeutic effect may not be due to spirocheticidal action alone, the only thing we really know about bismuth, arsphenamine and mercury is that they are spirocheticidal. From what is known of their spirocheticidal action, bismuth should not replace arsphenamine, and I am glad that Dr. Wright brought this out. However, the only way we can estimate the value of any treatment is to use it alone in a series of cases, as Dr. Wright has done. We are coming to a fairly general acceptance of the fact that the syphilitic patients whom we expect to cure must be treated continuously for a long period, and in such a program we surely have room for more than one drug. In fact, it makes therapy easier if we have three drugs with which to vary treatment, rather than two. It seems to me that at present one is not doing everything possible for his patient unless he gives arsphenamine, mercury and bismuth.

DR. JOSEPH J. ELLER, New York: I should like to recall to your minds the work of the late Dr. Fordyce and Dr. Rosen on the injection of arsphenamine and soluble mercury into the buttocks. Their results were very good in congenital syphilis. It would be a good idea to treat, say, 100 cases with bismuth according to Dr. Wright's method, and a control series with arsphenamine and mercury according to Fordyce and Rosen's method; also a third series of cases with all three drugs combined, with the proper alternations. We might give bismuth and arsphenamine, and mercury and arsphenamine in another. I believe that the latter method would give better results and less Wassermann-fast cases.

DR. JOHN H. STOKES, Philadelphia: I agree, in the main, with Dr. Wright's statement that prenatal syphilis should have prolonged treatment. But I should like to modify it to

the extent of saying that the treatment should also be individualized. To consider prenatal syphilis cases as all being of the same stripe, and requiring uniform treatment with any one drug or method, may be as serious a mistake as the same point of view with reference to the disease as a whole. The onset of acute complications, such as interstitial keratitis, must be met by specially intensive and rapid-fire methods, of which I know none better than the combined use of a soluble mercurial salt, arsphenamine (not neoarsphenamine) and large doses of iodide. Because of the rapidity of its action, I feel that this combined treatment is superior, in this particular situation, to the use of insoluble bismuth. I have seen infiltrates that were reappearing in the cornea under bismuth begin to clear again when mercuric succinimide replaced potassium bismuth tartrate. Only by a selection of therapeutic method to meet the actual situation can we overcome the feeling of hopelessness in this as in other aspects of syphilis.

DR. CARROLL S. WRIGHT, Philadelphia: I believe that I was not fair to neoarsphenamine and mercury in that, in getting a series of cases to treat with bismuth alone, I was not able to get cases that had not been treated by arsphenamine and other means. I do believe that if these patients had not had the previous treatment with mercury and neoarsphenamine my results would not have been so good. However, I think that this does not detract in any way from the value of bismuth. If bismuth is able to swing cases which have resisted neoarsphenamine and mercury from serologic positive to serologic negative reactions, it must be regarded as a valuable drug. We tried the Fordyce and Rosen method for a time, but the children would not tolerate the intramuscular injections of mercury into the buttocks, and when we tried the neoarsphenamine intramuscularly, the pain was considerably worse than it has been since we have been using the bismuth.

VENOUS PRESSURE IN CARDIAC DECOMPENSATION *

J. A. E. EYSTER, M.D.
MADISON, WIS.

The most important development in recent years in cardiodynamics is the discovery of the relationship between venous pressure and heart activity. The older conception, based largely on theoretical deductions from the physical conditions of the circulation and on data derived from studies of mechanical circulation schemata, was that the heart output modified venous pressure by varying the rapidity with which blood was taken from the veins and pumped into the arteries. In this conception it is clear that cardiac activity is the primary factor, and changes in venous pressure are the result. In the modern conception the order of these is reversed, and it is now recognized that the venous pressure is the main factor in regulating cardiac activity. An increased venous return causes increased cardiac output; a reduced return with a lower pressure tends to result in reduced cardiac activity. There is thus a self-regulating mechanism which tends to stabilize venous pressure at an approximately constant level through variation of the energy released by the cardiac muscle in its contraction. With increased venous return the ventricles fill to a greater extent, the duration of systole is longer,[1] while the residual blood at the end of systole may or may not be reduced.

The heart rate is also usually increased.[2] In the dog, variations of right auricular venous pressure between −2 and +17 cm. of water cause increases in stroke volume from 40 to 150 per cent.[3] The venous pressure represents the filling pressure of the ventricle, immediately before ventricular contraction, and is the initial load against which the ventricular muscle contracts.

It has been known for many years that the energy released by the contraction of skeletal muscle increases with increasing initial load within certain well defined limits, and modern work has simply extended this conception to cardiac muscle. Whether the increased energy output is the result of increased initial length or increased initial tension, or both, of the muscle fiber, is a controversy which still involves the explanation of the mechanism of this reaction in both the skeletal and the heart muscle, and its consideration is beyond the scope of this paper. The important conception is that within limits the heart responds to an increased load with increased work, and the upper range of response is that which has been known for years as the cardiac reserve.

This conception has also greatly extended our understanding of the behavior of the heart in cardiac disease and in heart failure. Cardiac decompensation occurs when the initial load on the ventricles, represented by the venous pressure, exceeds the physiologic limit of the muscle to respond to an increased load by increased work. It is comparable in every way to loading a skeletal muscle with a load too great to be moved effectively. The muscle stretches beyond its physiologic limits, and the contractions are weak and inefficient. An acute dilatation supervenes, as has been shown by the usual methods of physical examination and the more exact methods of roentgen-ray study.[4] This may conceivably occur as the result of a reduced range of physiologic response on the part of the muscle or an abnormally high venous pressure load, or both of these factors acting together. Probably a combination of the two is invariably present, and the primary factor is doubtless a narrowed range of response of the muscle due to disease.

Modern work points almost conclusively to the view that the normal muscle can respond effectively to any venous load resulting from the most violent form of physical activity. The resulting rise of venous pressure may be as great as or greater than that encountered in cardiac failure, but the response of the muscle is adequate, the load is effectively moved, and the high venous pressure is only temporary. Stretching of the muscle is minimal and within physiologic limits.[5] New evidence indicates that the degree of stretching that occurs in the presence of valve lesions results in injury to the muscle and that the resulting hypertrophy is a reaction to injury.[6] There results a muscle which has increased ability to do work, but in which the range of physiologic response above that required under minimal (basal) conditions is narrowed. A subsequent increase of initial load may exceed this range and acute dilatation and decompensation supervene. When this occurs, the heart fails to move the load effectively and a further increase of venous stagnation and rise of venous pressure results, which increases to a greater degree the

* From the University of Wisconsin.
* Read before the Section on Pharmacology and Therapeutics at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 18, 1927.

1. Wiggers, C. J., and Katz, L. N.: Am. J. Physiol. **58:** 439 (Jan.) 1922.
2. Bainbridge, F. A.: J. Physiol. **1:** 65, 1915-1916. De Graff, W. C., and Sands, J.: Am. J. Physiol. **74:** 415 (Oct.) 1925.
3. Meek, W. J., and Eyster, J. A. E.: Am. J. Physiol. **61:** 186 (June) 1922.
4. Eyster, J. A. E., and Middleton, W. S.: Clinical Studies on Venous Pressure, Arch. Int. Med. **34:** 228 (Aug.) 1924. Gordon, Burgess: Am. J. M. Sc. **170:** 671 (Nov.) 1925.
5. Dietlen, H., and Moritz, F.: München. med. Wchnschr. **55:** 489, 1908. Nicolai, G. F., and Zuntz, N.: Berl. klin. Wchnschr. **51:** 821, 1914. McCrea, F. D.: Read before the American Physiological Society, April 15, 1927.
6. Eyster, J. A. E.: Read before the American Physiological Society, April 15, 1927.

margin between the extent of the load and the upper limit of physiologic response on the part of the muscle. The "vicious circle" of cardiac decompensation thus becomes established. Under these conditions the venous pressure, even under conditions of rest, is abnormally high and varies directly with the intensity of the failure.[7] This appears to be the only condition in which a sustained high systemic pressure occurs.[8]

Most of the therapeutic efforts in acute failure are directed toward a reduction of the venous load in an effort to restore the normal situation in which the load is within the range of physiologic response of the heart muscle. Complete physical rest, reduction of blood volume indirectly by diuresis, purgation and restriction of fluid intake or directly by venesection are well known effective procedures with this end in view. Cardiac competence is regained when by these and other measures the normal relation between load and work response is regained.[9] The most effective guide and index in the rational therapy of cardiac decompensation is the systemic venous pressure. The most immediately effective method of lowering the venous load is the direct removal of blood from the systemic veins. The general blood volume in cardiac decompensation may not be increased,[10] but the failure of the heart to move the normal amount of blood from the veins results in venous stagnation and a marked increase in the volume of blood in this part of the circulation. The result of removal of a part of this blood reduces the venous blood volume and the pressure of the blood in the heart in diastole [11] and diminishes the degree of cardiac dilatation [12] while in normal conditions of the circulation this procedure produces none or only transitory effects on venous pressure and cardiac volume.[13]

It seems quite evident in the light of present knowledge of cardiodynamics in cardiac failure that venesection is a most important direct and rational therapeutic procedure, and has not received the attention nor utilization that its value merits. I have available at the present time data relating to venous pressure and general clinical changes following venesection in twenty-one cases of severe decompensation. These patients were in the medical wards of the Wisconsin General Hospital, in the service of Dr. W. S. Middleton. A more detailed report will be given subsequently, but I will present some of the more important features at this time.

Ten of these were instances of primary endocarditis. In sixteen, previous periods of cardiac decompensation had occurred. The lowest venous pressure before venesection was 15, the highest 36 centimeters of water. In all but one the venous pressure was 20 cm. of water or higher. The average for all cases was 23 cm. The amount of blood removed varied from 265 to 600 cc. The lowest venous pressure level obtained within forty-eight hours following venesection was 12 cm. of water. Immediate clinical improvement was noted in fifteen cases. In six of these the venous pressure remained low and compensation was restored. Of the nine patients in this group who died in the hospital the termination in four was by what may be called circulatory accidents, pulmonary infarction or cerebral hemorrhage, and in one sudden death followed straining at stool at a time when the patient was clinically improved. In the recoveries, the fall of venous pressure subsequent to the venesection was maintained. In six cases clinical improvement did not result, the fall of venous pressure was not maintained and death occurred within thirty-six hours in five, and on the twentieth day in one.

Whether or not venesection is an effective method in restoring compensation is probably dependent in the individual cases on the range of physiologic response present in the heart. If this is not too greatly narrowed as a result of disease, malnutrition and anoxemia of the muscle, it is possible by venesection to lower the venous pressure to within its range. When this point is reached the heart begins to respond to the still high venous load with increased work, and by its response moves the load effectively and tends to reduce venous pressure to normal. This is, in fact, restoration of compensation. Even a brief period in which the pressure is lowered to the point of adequate response on the part of the muscle may result in a maintained ability to keep ahead of the load and prevent recurrence of inadequate response. If, on the other hand, the physiologic limit of response is too low, venesection may not reduce the load sufficiently to come within its range. In this event, of course, the procedure is ineffective, and a favorable result cannot be expected.

7. Hooker, D. R., and Eyster, J. A. E.: Bull. Johns Hopkins Hosp. **29:** 274, 1908.
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11. Eyster (footnote 4). Hooker and Eyster (footnote 7).
12. Gordon (footnote 4).
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REFLEX VOMITING FROM THE HEART

THE MECHANISM OF VOMITING INDUCED BY DIGITALIS BODIES *

ROBERT A. HATCHER, M.D.
AND
SOMA WEISS, M.D.
NEW YORK

Vomiting is one of the most common symptoms observed in disease, but its significance has usually received little consideration on the part of physicians. Consequently, it is hoped that this discussion of the character of the phenomenon and the nervous mechanism involved, as illustrated by the emetic action of the digitalis bodies, will result in a wider appreciation of the meaning of vomiting in disease. Since our studies have modified our conception of the vomiting act, we shall discuss the subject briefly.

Vomiting is a convulsive seizure in the higher animals and man. It is always of reflex origin, and it has a definite motor mechanism with afferent paths for nervous impulses from all the organs and probably from all parts of the body. Since vomiting is always of reflex origin, it is a sensitive indicator of many changes in different organs. It is not correct to classify vomiting as central and reflex in type, though it does result from direct stimulation of the center in some cases, and from irritation of peripheral organs in others. Projectile vomiting is sometimes described as the central type. It may occur when the stomach is filled with liquid, and a sudden paroxysm preceded by brief nausea drives the liquid out through the mouth or nose

* From the Department of Pharmacology, Cornell University Medical College.
* The details of the experimental evidence on which the conclusions in this paper are based will be published elsewhere.
* Read before the Section on Pharmacology and Therapeutics at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 18, 1927.

with considerable force. Obviously, this type of vomiting cannot occur when the stomach is filled with solid or semisolid food.

Vomiting is a reflex act when an agent such as apomorphine acts directly on the center in the medulla. In such cases the vomiting center becomes abnormally excitable, and impulses originating in the normal viscera and other parts of the body pass up afferent nerves to the center and induce emesis. Such normal impulses are too weak to cause vomiting when the center is normal, but abnormally strong impulses, such as those induced in the stomach by copper sulphate, are effective. When normal and abnormal impulses are prevented from reaching the center by blocking the nerve paths, the animal does not vomit, and when the center is much depressed by the direct application of morphine or otherwise, vomiting cannot be induced, as we found in some of our experiments.

The character of the vomiting act induced by centrally acting emetics is quite similar to that caused by irritation of the stomach or other organ. In the first case, normal afferent impulses act on an abnormally sensitive center; in the second, abnormally active impulses act on a normal center. The vomiting act is alike except that it varies in intensity and frequency of repetition. Strychnine does not cause vomiting after it enters the circulation, but the direct application of a minute amount of strychnine to the center increases its reflex excitability just as toxic doses do that of the cord, and the effect of strychnine applied to the center is like that of apomorphine.

There is reason to believe that the vomiting center becomes hyperexcitable in various pathologic conditions; that patients who vomit with moderately increased intracranial pressure and cease to vomit as the condition progresses do so because a slight increase above the normal intracranial pressure increases the excitability of the vomiting center, and a greatly increased pressure diminishes its excitability through injury to the cells. The frequent occurrence of nausea and vomiting (with belching) associated with coronary occlusion and angina pectoris shows that the heart is provided with the nervous mechanism necessary for the vomiting reflex.

The conception that vomiting is always a reflex act is important because the phenomenon involves widely distributed visceromotor reflex actions; it is especially suitable, therefore, for study of the afferent visceral autonomic nervous system, knowledge of which is fragmentary, and the recognition of the central or peripheral seat of action of the exciting cause of vomiting in a given case may have great clinical importance.

Langley [1] specifically defined the autonomic nervous system as consisting of efferent fibers, but our studies on vomiting [2] have led us to believe that the afferent paths may be classified as sympathetic and parasympathetic with reference to their behavior toward drugs such as atropine, physostigmine and ergotoxine, which exert selective actions on the endings [3] of the afferent fibers, as well as on those of the motor fibers of the autonomic nervous system.

The differentiation of the afferent paths is sometimes easy; for example, cutting the vagi abolishes the emetic action of antimony and potassium tartrate in the stomach, but the differentiation is difficult in those cases in which a drug irritates or excites the afferent endings of some fibers in both the vagus and the sympathetic, but not those of all fibers in either trunk. A few drugs, such as aconitine and emetine, act directly on the center and also peripherally to cause vomiting.

Since any one of the peripherally acting emetics usually stimulates the endings of some of the fibers of the sympathetic nerve, or those of the parasympathetic nerve in different parts of the body in varying degrees, one can never be certain that the action is exerted on only one organ, but in many cases the action exerted on one is so much greater than that on any other that one may be certain that the total emetic action is virtually limited to the one organ.

The vagus trunk contains afferent fibers the endings of which behave toward the drugs previously mentioned like those of some of the fibers contained in the sympathetic trunk. Certain types of fibers are more abundant in the vagus; other types are more abundant in the sympathetic. Atropine paralyzes several types of afferent endings of vagus fibers and several of those of the sympathetic, while ergotoxine paralyzes several types of afferent endings of fibers in each of the trunks—vagus and sympathetic; they do not act on the same endings of either system, and there are endings in each system on which neither acts apparently. Ergotoxine paralyzes all afferent endings that are concerned with normal emetic impulses; hence, it abolishes the emetic action of apomorphine, though it does not have a direct action on the center. It is interesting to observe that the emetic action of pilocarpine is exerted on the afferent endings of fibers that appear to be limited to the sympathetic trunk, though pilocarpine is a typical stimulant of the parasympathetic type of the efferent nerves.

We have investigated the seat of the emetic action of various drugs, and have paid especial attention to the digitalis bodies during the last few years. Emphasis is placed on the fact that all the digitalis bodies exert closely similar cardiac actions, but there are different paths for the emetic impulses induced in the heart by different members of the group. This is easy to demonstrate, though we are unable to explain why it is so. It seems probable that structures in the heart which are closely related functionally are supplied by nerve fibers, the endings of which vary in the degree to which they are stimulated by different digitalis bodies. It is well known, of course, that such variation toward normal excitation exists in the conducting system of the heart; otherwise the orderly beat could not be maintained by the present mechanism. Mueller [4] states that five types of intracardiac ganglion cells have been described. We believe that the demonstration that at least two of the digitalis bodies induce vomiting reflexly by their cardiac action leads to the conclusion that all the digitalis bodies have a similar, or closely related, cardiac emetic action, and this is supported by other evidence. We have therefore limited the present investigation mainly to the emetic actions of two pure principles—strophanthidin and ouabain—for reasons that will be apparent, but our conclusions are based in part on previous work which will be mentioned briefly.

Hatcher and Eggleston [5] showed that the emetic action of the digitalis bodies is not exerted on the

1. Langley, J. N.: The Autonomic Nervous System, part 1, 1921, p. 1.

2. Hatcher, R. A., and Weiss, Soma: The Seat of the Emetic Action of the Digitalis Bodies, Arch. Int. Med. **29:** 690 (May) 1922; Studies on vomiting, J. Pharmacol. & Exper. Therap. **22:** 139 (Oct.) 1923.

3. The terms "endings" and "vomiting center" are used here in the senses defined in our previous studies on vomiting. We do not attempt to define the exact nature of these endings except to state that they are concerned with transmitting afferent impulses, and we do not mean to imply that the cells of the vomiting center are without other function.

4. Mueller, L. R.: Beitraege zur Anatomie, Histologie und Physiologie des Nervus vagus, zugleich ein Beitrag zur Neurologie des Herzens, der Bronchien und des Magens, Deutsches Arch. f. klin. Med. **101:** 421, 1911.

5. Hatcher, R. A., and Eggleston, Cary: The Emetic Action of the Digitalis Bodies, J. Pharmacol. & Exper. Therap. **4:** 113 (Nov.) 1912.

gastro-intestinal tract regardless of the mode of administration, and Hatcher and Weiss [6] showed that they do not act on the vomiting center, from which it follows that the action is peripheral, though, as just stated, it is not on the gastro-intestinal tract. They found, further, that cutting the nervous connections with the heart as completely as possible prevents the emetic action of the digitalis bodies under the conditions of the experiments.

No experimental evidence tending to discredit this view, except that of Dresbach and Waddell,[7] has been published. They cut all nervous connections with the heart in the cat, so far as possible, and after some months they found that the intraperitoneal injection of strophanthidin induced vomiting, but the doses then required were much larger than those that had been found effective in the same animals before operation. They considered the results as evidence that strophanthidin acts directly on the center, though they were unable to induce nausea or vomiting by its direct application to the center. This is in harmony with our observation that the direct application of various digitalis bodies directly to the center failed to cause nausea or vomiting in any case.

We have undertaken to explain the discrepancy between our previous results and those of Dresbach and Waddell, and have used nicotine alone or with atropine to block afferent emetic impulses from the heart in about 100 experiments. It may be said at once that atropine was entirely superfluous in these experiments, because it does not block any of the emetic impulses induced in the cat by ouabain, and it is not necessary when nicotine is used to block those of strophanthidin. Suitable doses of nicotine abolish the emetic action of ouabain and that of intravenous injections of strophanthidin, because nicotine paralyzes the afferent endings in the heart on which those drugs act to induce vomiting. It is possible that nicotine blocks these afferent impulses in the ganglions.

Nicotine does not depress the vomiting center when used in this way nor does it block all paths from the periphery, and it does not have a perceptible effect on the afferent endings in the peritoneum; hence it does not interfere with the emetic action of an intraperitoneal injection of strophanthidin. It is clear why larger intraperitoneal doses are required after the denervation of the heart than in intact animals. After the absorption of the smaller dose from the peritoneum, the drug acts on the heart of the normal cat to induce the vomiting reflex; after the cardiac nerves have been cut, such small amounts in the circulation act on the heart, but the impulses to the center are blocked and nausea or vomiting does not occur then; with the larger doses, however, the irritant local action on the peritoneum induces vomiting.

Other irritants also induce vomiting reflexly when they are injected intraperitoneally, and nicotine is without effect on the emetic action of mercuric chloride following its intraperitoneal injection. If nicotine depressed the center markedly, vomiting could not be induced by any means.

Professor Dresbach has furnished us with protocols of unpublished experiments in which digitoxin induced vomiting in cats in which the cardiac nerves had been cut. We found that nicotine does not abolish the emetic action of an intravenous dose of digitoxin, though it does delay the nausea and vomiting unmistakably. Some of the emetic impulses are blocked but some are not, from which we conclude that digitoxin stimulates the afferent endings of more than one path from the heart to the center, and this is true of digitalis itself.

Cutting the cardiac branches of the vagi with extirpation of the stellate ganglions abolishes the emetic action of ouabain for a time at least, and this operation blocks the greater number of paths from the heart to the center, but it is probable that new paths develop after the heart has been denervated as completely as possible, for there is a network of nervous tissue about the aorta and base of the heart. No one has induced vomiting by intravenous injection of a pure digitalis principle immediately after the denervation of the heart.

6. Hatcher, R. A., and Weiss, Soma: The Seat of the Emetic Action of the Digitalis Bodies, Arch. Int. Med. **29**: 690 (May) 1922.

7. Dresbach, M., and Waddell, K. C.: k-Strophanthidin Emesis in Cats with Denervated Hearts: The Seat of Its Action, J. Pharmacol. & Exper. Therap. **35**: 9 (Feb.) 1926.

SUMMARY

The space at our disposal does not permit of a discussion of all the evidence available that the heart is the seat of the emetic action of the digitalis bodies, but the more important evidence may be summarized:

1. Experiments on intact and eviscerated animals show that the emetic action of the digitalis bodies is not exerted on the stomach or intestines.

2. Vomiting is not induced by the direct application of any digitalis body directly to the center, though we have induced it in this way with minute amounts of many drugs.

3. Vomiting is not induced by the perfusion of the brain with blood to which a digitalis body has been added, but it is induced by the intravenous injection while the brain is perfused with blood in such a way as to exclude the digitalis body from the center.

4. Cutting the cardiac fibers of the vagi and extirpation of the stellate ganglions, or cutting the cord above the level at which fibers from the heart enter, abolishes the emetic action of the digitalis bodies. The effect is not due to depression, as has been intimated, for the far more severe operation for evisceration does not interfere with the emetic action of these drugs. New paths are probably formed after the heart has been denervated so far as possible.

5. Nicotine abolishes the emetic action of ouabain and that of intravenous doses of strophanthidin by paralyzing afferent endings, or, possibly, by paralyzing the connections in the ganglions through which the afferent fibers from the heart to the vomiting center pass. Nicotine does not abolish the emetic action of irritants, including strophanthidin and mercuric chloride, when they are applied directly to the peritoneum. It does not depress the vomiting center.

6. The vomiting center is not stimulated for more than a few minutes by the direct application to it of a single dose of any emetic so far as we know. Recovery follows promptly after the application of a moderate dose, and depression follows a large dose within a short time. The cardiac actions of digitoxin and those of digitalis are persistent, and their emetic action often persists for days. The cardiac action of strophanthidin is brief, and its emetic action is correspondingly fleeting. A similar correspondence exists between the duration of the cardiac action, and that of the emetic action of other digitalis bodies.

7. Evidence that the heart is provided with the nervous mechanism for reflex vomiting is also afforded by the fact that nausea and vomiting (with belching) are common symptoms attending coronary occlusion and angina pectoris.

8. The only published work that seemed to afford evidence that the digitalis bodies induce vomiting otherwise than through their action on the heart actually supports the view expressed here, because larger intraperitoneal doses of the digitalis body used were necessary to cause vomiting after the cardiac nerves had been cut than were required in the intact animal. The emetic action is then exerted locally on the peritoneum.

We are unable to devise any single type of experiment which would afford absolute proof that the digitalis bodies induce vomiting by their action on the heart, but the evidence of some 200 experiments of many kinds points to the heart as the seat of this action; this, together with the fact that evidence to the contrary has not been obtained, affords the strongest proof that the digitalis bodies induce vomiting reflexly by their direct action on the heart.

THE DRUG TREATMENT OF HEART DISEASE *

ROBERT L. LEVY, M.D.
AND
THOMAS T. MACKIE, M.D.
NEW YORK

"It is much easier to write upon a disease than upon a remedy. The former is in the hands of nature, and a faithful observer, with an eye of tolerable judgment, cannot fail to delineate a likeness. The latter will ever be subject to the whims, the inaccuracies and the blunders of mankind." Thus, in 1778, wrote William Withering [1] in a letter to a colleague concerning the uses of digitalis.

As in the management of any bodily disorder, so in the treatment of heart disease, the exhibition of drugs is only one aspect of therapeutic procedure. In derangements of the circulation, however, the intelligent application of medicinal measures is often an important factor in initiating improvement; frequently, their timely use is directly responsible for the saving of life.

A discussion of all the various drugs that have been employed in the treatment of circulatory disturbances is clearly beyond the scope of this paper. Accurate clinical observation and laboratory experiment have served to eliminate from common usage many inferior cardiac remedies whose alleged virtue was perpetuated by tradition. The drugs to be here considered are the more important of those which, in the light of present knowledge, are generally regarded as possessing established therapeutic value.

DIGITALIS

Digitalis is the most valuable drug in the treatment of heart disease. In recent years, much has been learned concerning its mode of action, methods for its standardization and the technic of its administration. A knowledge of certain basic facts is essential if effective therapeutic results are to be obtained.[2]

1. *Mode of Action.*—In therapeutic doses, digitalis causes an increase in the amplitude of ventricular contraction by direct action on the heart muscle. This has been demonstrated in animals and in man.[3] In normal dogs, it causes diminished cardiac output, but increases tonicity and diminishes dilatation;[4] these effects have not yet been demonstrated in the diseased human heart. In the presence of regular rhythm, it does not slow ventricular rate except in persons with edema, in those with rapidly beating, hypodynamic hearts and occasionally in children. The vagus center is stimulated, often with resultant prolongation of auriculoventricular conduction. In auricular fibrillation, ventricular slowing from digitalis is due in part to vagus stimulation and in part to its direct depressant action on the conductivity of the auriculoventricular junctional tissues. The blood pressure is inconstantly and variably affected. The diuretic effect is almost entirely due to improved renal circulation rather than to stimulation of the kidney epithelium. Nausea and vomiting resulting from digitalis intoxication are due to the direct action of the drug on the heart and not to an irritant effect on the gastric mucous membrane.[5] The afferent impulses from the poisoned heart are conveyed to the vomiting center in the medulla largely through the sympathetic nerves, in part, perhaps, by way of the vagus.

2. *Indications and Contraindications.*—The cardinal indication for the exhibition of digitalis is myocardial insufficiency. Evidence of a failing heart is afforded by characteristic symptoms and signs, such as dyspnea, orthopnea, cyanosis, heart pain on exertion, edema, congestion of the lung bases or liver, and hydrothorax. The most brilliant results are obtained when the auricles are fibrillating and the ventricular rate is rapid. A good effect may also be observed in the presence of regular (sinus) rhythm.[6] In cases of advanced cardiac failure with regular rhythm, those in the arteriosclerotic group respond better than those of rheumatic etiology.[7]

The occurrence of frequent ventricular premature beats suggests caution, for coupled rhythm is one of the toxic effects of digitalis. Premature beats are not infrequently seen, however, as one of the signs of beginning heart failure. Under these circumstances, the use of digitalis may cause their disappearance. In partial heart block the danger of further depressing auriculoventricular conduction must be considered; complete block may ensue. In complete auriculoventricular block not due to digitalis, the drug may be used freely, and in some cases may cause acceleration of the ventricular rate. The presence of hypertension likewise does not afford a contraindication; often the blood pressure will fall with the relief of the circulatory embarrassment.

In addition to its use in cardiac failure, digitalis may be employed over long periods of time in small (maintenance) doses in auricular fibrillation, when it is desired to control the ventricular rate; and in certain patients with regular rhythm in whom the myocardium is badly damaged, in order to produce a slight but continued effect on the heart muscle.

3. *Standardization.*—The chemistry of the digitalis bodies is still shrouded in obscurity. Chemical assay, therefore, is obviously not feasible. In order to make

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* From the Department of Medicine, Columbia University College of Physicians and Surgeons, and the Presbyterian Hospital.
* Read before the Section on Pharmacology and Therapeutics at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 18, 1927.

1. Withering, William: An Account of the Foxglove and Some of Its Medical Uses: With Practical Remarks on Dropsy, and Other Diseases, Birmingham, 1785, Introduction, p. xix.

2. Excellent recent monographs on digitalis are: Robinson, G. C.: The Therapeutic Use of Digitalis, Medicine **1**: 1 (May) 1922; Cushny, A. R.: The Action and Uses in Medicine of Digitalis and Its Allies, London, 1925.

3. Cohn, A. E., and Stewart, H. J.: Evidence that Digitalis Influences Contraction of the Heart in Man, J. Clin. Investigation **1**: 97 (Oct.) 1924.

4. Harrison, T. R., and Leonard, B. W.: The Effect of Digitalis on the Cardiac Output of Dogs and Its Bearing on the Action of the Drug in Heart Disease, J. Clin. Investigation **3**: 1 (Oct.) 1926.

5. Hatcher, R. A., and Weiss, Soma: The Seat of the Emetic Action of the Digitalis Bodies, Arch. Int. Med. **29**: 690 (May) 1922.

6. Christian, H. A.: Digitalis Therapy: Satisfactory Effects in Cardiac Cases with Regular Pulse-Rate, Am. J. M. Sc. **157**: 593 (May) 1919.

7. Marvin, H. M.: Digitalis and Diuretics in Heart Failure with Regular Rhythm, with Especial Reference to the Importance of Etiologic Classification of Heart Disease, J. Clin. Investigation **3**: 521 (Feb.) 1927.

preparations of uniform and comparable potency, it has been necessary to resort to biologic standardization. The two technics in common use are: (*a*) the frog method, which aims to determine the quantity of digitalis which will produce permanent systole of the ventricle in an hour, when injected into the ventral lymph sac, and (*b*) the cat method of Hatcher and Brody,[8] which ascertains the minimal lethal dose per kilogram of cat when injected slowly, during a period of about one hour, into the femoral vein. The relative merit of these methods is still under discussion, although the cat method, in spite of its greater expense and technical difficulty, is gaining in favor. Equivalent cat units of standard digitalis preparations are 1 cc. (15 minims) of the tincture, 0.1 Gm. (1½ grains) of the powdered leaf, and 0.1 mg. (1/60 grain) of ouabain. Fortunately, the same amounts of preparations assayed by the two methods are of approximately equivalent therapeutic potencies.

Biologic assay is far from ideal. The results are not always directly transferable to man because of variabilities in absorption and because biologic activity does not afford an assurance of therapeutic efficacy. At the present time, it is the best method of standardization available. It has served to abolish, in large measure, the gross variations in strength formerly so common and disturbing.

4. *Mode of Administration.*—When possible, it is best to give digitalis by mouth. This method is simple, safe and efficacious. If sufficiently large doses are given, a beginning effect on the heart may be obtained in from two to five hours, a maximal effect in from six to twelve hours.[9]

In the presence of nausea or vomiting, or after surgical operation, digitalis may be administered by rectum. The rate of absorption is comparable to that observed when similar doses are given by mouth.[10]

Intravenous injection of digitalis or strophanthin is always attended with some danger. The margin of safety between therapeutic and toxic dose is relatively small.[11] A digitalis preparation should be used intravenously or intramuscularly only as an emergency measure, when it is imperative that the effects shall be induced within two hours or less; or when oral or rectal administration is impossible, e. g., if the patient is in coma. Under such circumstances, careful determination of dosage is essential.

5. *Choice of a Preparation.*—In the words of Withering, "the ingenuity of man has ever been fond of exerting itself to vary the forms and combinations of medicines." Certainly is this true of digitalis preparations. The infusion, because of its instability, has fallen into disuse. For oral administration, the tincture is now a common favorite. It has rather an unpleasant taste and demands of the nurse or patient that each dose be measured. Measuring introduces the confusing distinction between drops and minims, which is responsible for so much ineffective digitalis therapy. Depending on the size of the dropper, 1 minim of tincture may be equivalent to two, three or more drops.

A standardized powdered leaf, made into pills, tablets or capsules of 0.1 Gm. (1½ grains) each, answers all the necessary requirements for oral use, and eliminates the necessity of measurement. Absorption is good and deterioration is slow. Several excellent preparations of this sort, made by reliable pharmaceutic houses, are on the market. It is well to become familiar with the clinical activity of one or two such preparations and to use them consistently. To prescribe powdered digitalis at a local pharmacy is hazardous because its potency is apt to be variable and unknown.

Squill, apocynum, convallaria, strophanthus and strophanthin are absorbed poorly and irregularly from the gastro-intestinal tract and are therefore unsuitable for oral use.

For rectal administration, the tincture may be employed, diluted with from 25 to 50 cc. of tap water. An aqueous solution in 15 cc. ampules (Digitan, Merck) has been especially put up for this purpose. It is less irritating to the rectal mucosa than the tincture.

If intravenous or intramuscular injection is necessary, ouabain may be used. This is chemically and pharmacologically identical with crystalline gratus strophanthin. Being a crystalline body, it is preferable to amorphous strophanthin, which is less readily obtained in the pure state. Ouabain should be put up in hypodermic tablets or in hard glass containers in a buffered solvent, in order to avoid deterioration caused by absorption of alkali from the glass.[12] Various aqueous preparations of digitalis, marketed in ampules, have also proved satisfactory.[13]

6. *Dosage.*—Many more patients suffer from too little digitalis than from too much. To Eggleston[14] belongs a large share of the credit for demonstrating the feasibility of giving relatively large doses. Experience with standardized digitalis has shown that the average total dose for inducing full therapeutic effects within from twenty-four to forty-eight hours, in an adult who has not received digitalis within two weeks, is 1.5 Gm. (22 grains) of the leaf, or 15 cc. (225 minims) of the tincture. The range of full therapeutic dosage is from 1 to 2 Gm. of leaf, or from 10 to 20 cc. of tincture. It is usually safe to administer 1 Gm. (10 cc.) in divided doses during the first twenty-four hours; this may conveniently be given at from four to six hour intervals. In the second twenty-four hours, 0.5 Gm. (5 cc.) may be given in three doses (0.2, 0.2 and 0.1 Gm.) at similar intervals. Treatment may then be stopped or continued according to the effects observed. By using smaller doses, over a longer period, more gradual effects may be induced. If rapid digitalization is indicated, large single doses, from 1 to 2 Gm. (10 to 20 cc.) may be administered.[15] If such heroic dosage is undertaken, one must be certain that digitalis has not previously been given within the specified two-week period. Relatively large amounts may be given to children with comparative impunity.[16]

Calculation of dose according to body weight is unnecessary. It affords a false sense of security on the basis of a formula which yields only an approximate figure. The range of variation, both above and below, may be considerable in individual patients, because of differences in absorption and susceptibility. This range is sufficiently wide to include the limits of therapeutic dosage as determined by clinical experience. Successful

8. Hatcher, R. A., and Brody, J. G.: Biological Standardization of Drugs, Am. J. Pharm. **82**: 360, 1910.
9. Eggleston, Cary; and Wyckoff, John: The Absorption of Digitalis in Man, Arch. Int. Med. **30**: 133 (Aug.) 1922.
10. Levy, R. L.: Rectal Digitalis Therapy, Arch. Int. Med. **33**: 742 (June) 1924.
11. Levine, S. A., and Cunningham, T. D.: The Margin of Safety of Intravenous Digitalis in Cats, Arch. Int. Med. **26**: 293 (Sept.) 1920.
12. Levy, R. L., and Cullen, G. E.: Deterioration of Crystalline Strophanthin in Aqueous Solution: Its Relation to Hydrogen Ion Concentration and a Method for Its Prevention, J. Exper. Med. **31**: 267 (March) 1920.
13. Pardee, H. E. B.: Hypodermic Digitalis Preparations, J. A. M. A. **83**: 1359 (Oct. 31) 1925.
14. Eggleston, Cary: Digitalis Dosage, Arch. Int. Med. **16**: 1 (July) 1915.
15. Robinson, G. C.: The Rapidity and Persistence of the Action of Digitalis on Hearts Showing Auricular Fibrillation, Am. J. M. Sc. **159**: 121 (Jan.) 1920.
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digitalis therapy requires careful study of idiosyncrasy and individual requirements. Standardization of the drug and the establishment of more accurate criteria for therapeutic effects have, in large measure, eliminated the necessity of inducing toxic manifestations in order to insure full digitalization.

It has been shown that digitalis disappears from the body at the rate of approximately 0.1 to 0.2 Gm. in twenty-four hours.[17] Thus, 0.15 Gm. (1.5 cc.) may be regarded as the average maintenance dose; i. e., the daily dose necessary to continue a digitalis effect at a desired level. Likewise, if the drug has been previously given, the effective amount remaining in the body may be calculated by subtracting, from the total given, 0.15 Gm. for each day elapsing since the beginning of administration. Thus, if a total of 1.5 Gm. was given on one day, it would take about ten days for the drug to be completely eliminated. Digitalis effects may, on occasion, persist for as long as three weeks after administration has been discontinued.

If introduced by rectum, the dose is the same as when given by mouth.

For intravenous (or intramuscular) injection of strophanthin, 0.5 mg. as a maximum may be given to an adult in one dose; if necessary, this may be followed by smaller amounts, given at intervals of one hour, up to a total of 1 mg. Oral or rectal administration should be instituted as soon as possible if further therapy is indicated. The therapeutic dose of aqueous solutions of digitalis for intravenous use has been found to be from 0.6 to 1.1 Gm. (6 to 11 cc.).[13] Before undertaking intravenous therapy, it is essential to be certain that the patient has not been taking digitalis in any form during the preceding two weeks.

7. *Toxic Effects.*—These are so well known as to require but little comment. Nausea, vomiting, headache, drowsiness, diarrhea and coupled rhythm due to ventricular premature beats are among the earlier evidences of poisoning. Mental confusion and visual disturbances [18] are less commonly observed. In more severe intoxication, heart block (partial or complete) and ventricular tachycardia may occur. On the appearance of any of these effects, the drug should be discontinued.

QUINIDINE

Introduced into clinical cardiology by Frey [19] in 1918, quinidine has proved useful in modifying certain disorders of the heart beat. It has been used chiefly in auricular fibrillation for the restoration of normal rhythm.

1. *Mode of Action.*—A circus movement, having its path about the mouths of the great veins, has been shown to be the disordered mechanism at the basis of fibrillation and flutter of the auricles. Quinidine prolongs the refractory period of the auricular muscle and so tends to terminate the circus contraction. On the other hand, the drug retards fiber conduction in the auricle, an effect favoring continuation of the circus.[20] Normal rhythm probably ensues when the first effect predominates over the second. Quinidine also depresses cardiac irritability but increases the amplitude of ventricular contraction.[21]

2. *Choice of Cases.*—Not every patient with persistent auricular fibrillation should receive quinidine, for two reasons. First, in not every case will there be a reversion to normal rhythm, nor, if restoration is made, will this mechanism necessarily be maintained; second, by selection of cases, the danger of accident, such as embolism, sudden collapse or the appearance of undesirable disturbances in rhythm, may be minimized.

The chief criterion of the likelihood of a successful issue is a competent myocardium. Guides in the selection of suitable cases are: (*a*) fibrillation of recent onset; (*b*) little cardiac enlargement; (*c*) absence of valvular disease; (*d*) fibrillation associated with an acute infection, such as influenza or pyelitis, and (*e*) hyperthyroidism, provided there is only moderate myocardial injury and preferably after operation. In my experience, which coincides with that of the members of the Cardiac Club of London,[22] cases fulfilling the first three specifications have fared best. Criteria for eliminating unsuitable cases are: (*a*) badly injured hearts, especially with marked enlargement and long-standing valvular disease; (*b*) hearts which, after rest and digitalis, evince but little evidence of reserve strength; (*c*) a history of embolism; (*d*) patients with an idiosyncrasy for cinchona derivatives, and (*e*) occasionally, patients giving a history of cardiac pain which ceased after the onset of fibrillation.

If these criteria are followed, it becomes clear that the number of patients eligible for quinidine therapy is limited. That is precisely the point to be stressed. When in doubt, it is wiser to decide against the use of quinidine and to employ the more conservative method of digitalis medication. By observing this precept, the disappointment of failure is obviated and the hazards are avoided.

3. *Technic of Administration.*[23]—It is advisable to carry on the treatment with the patient in bed, under the supervision of a nurse and preferably under electrocardiographic control. Administration of a course of therapy to ambulatory patients is to be deprecated. Heart failure, if present, should first be managed by the use of suitable measures, including digitalis. The ventricular rate is best maintained between 60 and 70 per minute. It is desirable to attain a maximal degree of circulatory efficiency before beginning the use of quinidine.

The individual doses of quinidine sulphate, in tablet or capsule, may be given at intervals of two hours as follows: first day, two doses of 0.2 Gm. (3 grains). These dosages are to test for the presence of idiosyncrasy to cinchona. If this is found to exist, treatment should at once be abandoned. Normal rhythm may occasionally ensue from this small, preliminary dosage. Second day, three doses of 0.4 Gm. Third day, four doses of 0.4 Gm. Fourth and succeeding days, five doses of 0.4 Gm. Larger dosage has been used [24] but is not without added risk. The treatment may be continued for a week, though usually a successful result, if obtainable, is accomplished in from four to six days. If it is necessary to prolong treatment beyond this period, normal rhythm, even though restored, is often not maintained.

After restoration of normal rhythm, it is desirable to continue with small doses (0.2 Gm. two or three

17. Pardee, H. E. B.: Notes on Digitalis Medication: I. The Rate of Disappearance of Digitalis from the Body, J. A. M. A. **73:** 1822 (Dec. 13) 1919.

18. Sprague, H. B.; White, P. D., and Kellogg, J. F.: Disturbances of Vision Due to Digitalis, J. A. M. A. **85:** 716 (Sept. 5) 1925.

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22. Hay, J.: The Action of Quinidin in the Treatment of Heart Disease (Based on the Experiences of Certain Members of the Cardiac Club), Lancet **2:** 543 (Sept. 13) 1924.

23. Levy, R. L.: Clinical Studies of Quinidin: III. Some Results of the Quinidin Treatment of Auricular Fibrillation, New York State J. Med. **22:** 276 (June) 1922.

24. Sidel, N., and Dorwart, F. G.: Quinidin Sulphate in Auricular Fibrillation, Boston M. & S. J. **196:** 216 (Feb. 10) 1927.

times a day) for several weeks or months. This amount may be taken over long periods of time without danger or discomfort.

In paroxysmal auricular fibrillation such long-continued, small dosage has been conspicuously successful in preventing the onset of attacks. In certain cases of paroxysmal tachycardia, both auricular and ventricular, a less constant but occasionally brilliant prophylactic effect has been observed.

In auricular flutter, the results with quinidine have not been as satisfactory as in fibrillation; digitalis is the drug of choice.

Intravenous injection of quinidine is dangerous; for, as in the case of digitalis and strophanthin, the margin of safety between therapeutic and toxic doses is small.

4. *Toxic Effects.*[25]—The onset of frequent premature beats or of a persistently high ventricular rate are indications for the cessation of treatment; ventricular tachycardia and ventricular fibrillation may result, if the drug is continued. The possibility of embolism due to the breaking off of an auricular thrombus has been overemphasized. A few instances of collapse and sudden death have been reported. Although selection of cases does not always assure a successful outcome, it reduces to a minimum the danger of accident.

DIURETICS

In the majority of cases of congestive heart failure, improvement in the circulation following digitalis therapy serves to initiate diuresis. In some cardiac patients, elimination of retained fluid is facilitated by the additional use of diuretic drugs.

1. *The Xanthine Group.*—The members of this group, theophylline (theocin), theobromine and theobromine sodiosalicylate, have recently been made the subject of comparative study by Marvin.[26] His conclusions aptly summarize the situation. Theophylline was found to be by far the most potent of the three, though its therapeutic usefulness was somewhat limited by the nausea and vomiting occasionally following its administration. It was given in the form of synthetic theophylline (theocin) in doses of 0.3 Gm. (5 grains) three times daily for two consecutive days. Theobromine sodiosalicylate, in doses of from 2.6 to 5.3 Gm. (40 to 80 grains) daily, was given for five or six consecutive days, and was then omitted for at least a week before being repeated. It was regarded as of very little value. Theobromine, in gelatin capsules, was given in doses of 0.6 Gm. (10 grains) three times daily for two consecutive days. It was more effective than theobromine sodiosalicylate and its administration was not attended by unpleasant effects. There was evidence to indicate that the xanthine diuretics are more effective in patients with arteriosclerotic and hypertensive cardiovascular disease than in those with rheumatic hearts.

2. *Merbaphen (Novasurol).*—This drug, introduced in Germany in 1917 for the treatment of syphilis, contains approximately 34 per cent of mercury and is administered in 10 per cent solution. Its diuretic value was first pointed out by Saxl and Heilig.[27]

The chief indication for its use is the presence of edema due to congestive heart failure. It has also been employed in cases of nephritis with edema. Its action is mainly on the kidneys, but in part also on the extrarenal tissues.[28] It is often effective in establishing diuresis when other measures have failed.[29] The dose is 1 or 2 cc. given by intramuscular or intravenous injection. A preliminary injection of 0.5 cc. should be given to test for possible idiosyncrasy to the drug. It is advisable not to repeat the injection at intervals shorter than four days, except following the test dose. Its diuretic action is sometimes enhanced by preliminary or coincident administration of ammonium chloride or ammonium nitrate, the latter being more easily taken. These drugs are given by mouth, in amounts of from 9 to 12 Gm. daily in divided doses, and are put up in capsules or enteric coated tablets.[30]

Following the use of merbaphen, toxic effects, such as stomatitis and salivation, bloody diarrhea, sterile abscesses after intramuscular injection and, more rarely, collapse, are sometimes observed. Evidence of renal irritation is uncommon. Merbaphen possesses certain disadvantages because of its mercurial content, and for that reason should usually be employed only after the xanthine diuretics have been given a thorough trial.

SEDATIVES

Mackenzie has truly said that "little benefit is likely to arise from treatment so long as a patient is worried or sleepless." In this respect, the bromides are most useful, in doses of 1 Gm. (15 grains) three or four times a day. Chloral or one of the derivatives of barbituric acid may also be given. Paraldehyde is safe but unpleasant. For dyspnea or severe pain, morphine and opium should be used in amounts sufficient to relieve distress without too greatly depressing the respiratory center.

MISCELLANEOUS DRUGS

In paroxysms of heart pain, the nitrites, given as glyceryl trinitrate by mouth, or amyl nitrite by inhalation, often afford prompt relief. In coronary sclerosis, euphylline (theophylline-ethylenediamine), in doses of 0.1 Gm., dissolved in water, given three times a day, is frequently helpful.[31] Its administration may be continued over a period of weeks. The action of the drug is to augment blood flow through the coronary vessels. The effect of salicylates or cinchoninic acid derivatives (cinchophen and neocinchophen) on the cardiac manifestations of acute rheumatic fever is problematic. During the acute phases of the disease it is well to administer one of these preparations in full therapeutic doses.

Patients with complete heart block, suffering from frequent attacks of syncope and convulsions (Adams-Stokes syndrome) have, on occasion, been rendered free from attacks by taking barium chloride. This is given by mouth, in doses of 30 mg. (one-half grain) four times a day.[32] Barium serves to increase the irritability of the ventricles and so prevent the long periods of asystole.

In the treatment of cardiovascular syphilis, two factors must be taken into consideration: the syphilitic infection on the one hand and the cardiac defect on the other.[33] Following intensive antisyphilitic treatment, as

25. Levy, R. L.: The Clinical Toxicology of Quinidin, J. A. M. A. **79:** (Sept. 30) 1922.
26. Marvin, H. M.: The Value of the Xanthine Diuretics in Congestive Heart Failure, J. A. M. A. **87:** 2043 (Dec. 18) 1926.
27. Saxl, P., and Heilig, R.: Ueber die diuretische Wirkung von Novasurol und anderen Quecksilberinjectionen, Wien. klin. Wchnschr. **33:** 943, 1920.
28. Crawford, J. H., and McIntosh, J. F.: Observations on the Use of Novasurol in Edema Due to Heart Failure, J. Clin. Investigation **1:** 333 (April) 1925.
29. Marvin, H. M.: Merbaphen (Novasurol) as a Diuretic in Congestive Heart Failure, J. A. M. A. **87:** 1016 (Sept. 25) 1926.
30. Jacobs, M., and Keith, N. M.: The Use of Diuretics in Cardiac Edema, M. Clin. N. Amer. **10:** 605 (Nov.) 1926.
31. Guggenheimer, H.: Zur Herzbehandlung bei Erkrankungen der Koronargefässe, Deutsche med. Wchnschr. **49:** 1007 (Aug. 3) 1923.
32. Cohn, A. E., and Levine, S. A.: The Beneficial Effects of Barium Chloride on Adams-Stokes Disease, Arch. Int. Med. **36:** 1 (July) 1925.
33. Brooks, H.: Syphilis of the Heart, Am. J. Syph. **5:** 37 (April) 1921.

Wile [34] has aptly expressed it, "the patient gets well or better of his syphilis, and may die as the result of the dispersion of his syphilitic cardiac lesion." The action of mercury and iodide is slow and therefore desirable. Bismuth may be substituted for mercury. The arsenicals should be used with caution, preferably after a course of mercury has been instituted. In all cases, the use of these drugs should be combined with intelligent treatment of the diseased heart.

THE TREATMENT OF HEART DISEASE OTHER THAN BY DRUGS *

PAUL D. WHITE, M.D.
BOSTON

Often the most important effects in the treatment of heart disease are through agents other than drugs. Rest and recreation, both physical and mental, exercise in proper amounts, climate, diet, physical therapy, psychotherapy, venesection and surgical intervention come into consideration, though at times brief, in the discussion of the subject.

REST AND RECREATION

Most important of all are rest and recreation, applicable in some degree at least to almost every cardiac patient. Although rest is occasionally abused by being carried out too long or too completely, it is generally not sufficiently employed. Sometimes a certain amount of freedom of choice must be left to the patient, as to how much he should rest, after full explanation of his physical condition has been given him, provided he is an intelligent and reasonable individual, provided his family is protected and acquiescent, and provided his associates and the public are not likely to be injured in any way by his sudden collapse or death. That is, a man may perhaps reasonably prefer to continue at his work at a risk of total disability or death in six months' time, if it does not in any way endanger the public, rather than to remain at home bedridden with survival for several years. Such an individual, however, should try to be fair to his family, his work and himself and not selfishly take unwise chances. One never knows, moreover, when rest, more or less complete, may restore such good health that a return to work in moderation may later be possible without much risk. All this should be frankly and fully discussed with patients who at first lightly and casually may refuse to rest.

The degree and duration of rest must vary naturally with the seriousness of the symptoms and the course of the illness. Each case must be considered individually. No absolute rules can be laid down. However, if after a correct diagnosis has been arrived at there is doubt about rest treatment, it is wiser to prescribe too much than too little. When accidentally through routine examination some serious or important cardiovascular condition is recorded, such as aortic regurgitation, aneurysm or marked hypertension, even though there are no cardiovascular symptoms, some restriction of activity is almost always wise to prolong life. Here again full explanation is necessary in order to obtain full cooperation from the individual. A strenuous person never previously ill may view at first even partial restriction of his activity with alarm and revolt. Gradually he may be led to regard the rest treatment as beneficial or life saving as the case may be, and sometimes it is even possible that he may pass to the other extreme, after weeks or months or years, and through his relish of a relatively idle leisurely life dislike and refuse the thought of even a partial resumption of his old strenuous existence.

Physical rest without mental relaxation may give unsatisfactory results. It is often of some value but far less than when the two are combined. However, it may be necessary first to insist on physical rest before the mind itself will be at ease. Gradually restiveness and worry decrease and finally satisfactory relaxation ensues. Sometimes the reverse is true and it may be necessary to prescribe mental relaxation before the patient will be able to rest physically. He must be relieved of business and home worries and get away from the nagging of the telephone, business letters and visitors before he can sit back or lie down relaxed. It is largely because of this very freedom of patients from their cares that spring waters at celebrated health resorts have acquired their famous healing powers. Often it is a debatable question whether we should allow a man to continue at his business for a day or two, or a week or a month, so that he may clear everything up preparatory to a real physical and mental rest. With mind at ease he may then spend weeks or months resting at home or abroad. But if in the course of this clearing up of his business matters there is danger of disaster to his health or life, a compromise may be necessary or an imperative order to turn everything over at once to somebody else. As a matter of fact we all—business and professional men alike—are apt to think too seriously of our importance. Our places can be well and often better filled than we think. Thus in a given case too much time should not be lost in getting rest treatment under way. Wisdom, tact, good judgment and a little knowledge of the ways of the world may be far more important for the physician to utilize than digitalis, glyceryl trinitrate and peremptory orders without explanation. Sometimes when it has appeared difficult or impossible to obtain sufficient realization of the need of rest on the part of the patient, an accident or necessary operation, if not too grave, may be of great value to the circulation by enforcing rest in bed. Thereby cardiac symptoms and signs may be greatly improved, the improvement more often resulting from the rest rather than from the correction of trouble by operation.

There are all degrees of rest in bed. In the sickest patients, with serious coronary thrombosis, for example, absolute rest is desired for weeks; even turning in bed should be executed with care and with the help of an able nurse. All feeding may have to be done by the nurse. There should be no excitement; only a rare, necessary visitor should be allowed. Physical examinations and history taking may be harmful and also transportation, as to a hospital. I feel confident that some patients would live longer and perhaps survive for years were they not carried to a hospital where they are overexamined and overtreated. Even patients who are not desperately ill but simply chronic invalids, ambulatory at home, may survive only a week or two under the exhausting though theoretically excellent investigations and treatment of the modern hospital. It is in such cases that the experienced wisdom of the old family physician is often far superior to the technical and textbook

34. Wile, U. J.: The Treatment of the Syphilitic Liver and Heart: A Therapeutic Paradox, Am. J. M. Sc. **164**: 415 (Sept.) 1922.

* Read before the Section on Pharmacology and Therapeutics at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 18, 1927.

knowledge and practice of the young intern, resident or specialist.

Rest in bed affords tremendous relief to the entire system, including the cardiovascular apparatus, if it is peaceful. The heart has only a fraction of the work to do when the body is at rest as when it is active. Digitalis may be unnecessary if rest is prescribed. A combination of these two measures is, however, often necessary to save lives when neither one alone would have sufficed. The recumbent position is sometimes impossible, and the patient must sit up because of orthopnea. Less blood reaches the heart and lungs in the upright position, and so the congestion and work of these organs decreases and relief results. It is important to recognize this point, which is practically and theoretically significant, and not to insist that an orthopneic patient remain in bed if he is far more comfortable in a chair. A suitable bed, allowing a sitting or semirecumbent position, and other devices, may mean the difference between recovery and failure; they seem little things, but in every serious illness little things are as vital as general principles of therapy.

If there is too much excitement at home, more complete rest may be obtained in a quiet hospital or hotel or in the home of a friend. Many people prefer quite rightly to remain at home to get this rest, but they must often be protected from visitors, telephone calls and the postman if they do so. Some people dread and some enjoy hospital care. Every case must be judged individually as to the need and advisability of transfer to a hospital. Sometimes adequate investigation and care are possible only in a hospital, under which conditions such treatment should be urged. Recently I saw a patient with serious heart failure who was kept alive for months through happy and skilful hospital attention, and who died within a week of leaving it.

Absolute rest in bed is sometimes difficult to carry out, especially in the case of patients who find it difficult to become accustomed to the details of such treatment. The use of the bedpan, for example, is not easy for every one. Its use can generally be taught, but sudden death may occur from the effort in its use as in the case of similar patients who use a cabinet at the bedside, or who walk or go by wheelchair to a nearby bathroom. Much individual judgment must be exercised in the prescription of absolute rest. Instructions must be detailed.

Congestive heart failure, acute infection of the heart, usually rheumatic, coronary thrombosis and angina pectoris are the conditions that require the most rest; the first three need rest in bed usually for weeks and symptomatically thereafter, and the last named needs at least some reduction in activity. I have found, as have others, that it is always worth while in obstinate, recurrent or severe angina pectoris to try a high degree of rest, even in bed, if mental relaxation is possible there, and for weeks if necessary. A fortnight or more of such absolute rest followed by a few more weeks of leisurely convalescence may get rid of the angina pectoris for months or years to come. This method, however, is by no means uniformly successful, especially if the patient returns later to his full strenuous life, which may have been in part at least originally responsible for the angina pectoris. In the case of coronary thrombosis, rest in bed should be prolonged for weeks, even in the mildest and most doubtful cases for two or three weeks, and in the more severe cases from four to six weeks at least before permission is given to sit up. Not a few patients are allowed up too soon, and some, even after many weeks in bed, have died suddenly when undertaking their first moderate exertion. A large infarct may take months to heal; it may never heal completely. Life in such cases hangs by a narrow thread. Other patients with important cardiovascular trouble but without symptoms, as those with aortic regurgitation, mitral stenosis, or marked hyptertension discovered accidentally, should naturally be advised to avoid undue strain, as noted, so that the day of failure may be postponed as long as possible. But here, again, individual judgment is always necessary.

PSYCHOTHERAPY

The relations of nurses and physicians to the patient and to each other create an atmosphere which may be favorable or unfavorable to the recovery of the patient who lies in bed very ill. An unpleasant nurse, a disagreeable physician, a fussy patient are all unfavorable. A part of the treatment, often of vital importance, is a cheerful, firm and lovable attitude on the part of nurse or physician. Such is psychotherapy, whether labeled that or not; it is always an important weapon of the physician and nurse against disease. When a successful and cheerful physician holds sway there is no need for Christian science. The ideal family physician in every generation has practiced the best of psychotherapy.

EXERCISE

Exercise as an aid in maintaining good health is beneficial in heart disease, provided there is cardiac reserve sufficient to permit it. When, however, there is angina pectoris or dyspnea on slight exertion, active exercise should not be allowed. During convalescence from cardiac failure or during long rest in bed because of cardiac symptoms, passive exercise such as that described by Schott may, like massage, be helpful in maintaining better peripheral circulation and muscular tone. In this country passive exercise is used but little; perhaps it should be used more. It may be helpful in a psychotherapeutic way if not directly.

Often there is too great a restriction of activity in the case of persons with chronic heart disease. Because there is an injured valve the patient should not be made a chronic invalid, though probably the most vigorous exercise, such as football or mountain climbing, should not be allowed. Some of the patients treated for heart disease at Bad Nauheim in Germany were allowed after their cure to climb the highest Alps, apparently without trouble. It is likely that these people did not have actual heart disease but some temporary functional disturbance like effort syndrome or premature beats. Such mountain climbing in the presence of organic heart disease should most certainly be forbidden.

Walking is probably the best exercise because it is easy for any one to accomplish, and easy to grade from the slowest, shortest walks to the most rapid and longest. Golf is good exercise for cardiac patients with some reserve, but fast, hard competitive playing over hilly holes is usually to be avoided. A few level holes may suffice. Golf has sometimes been wrongly blamed because there may be a death from heart failure on the links. Such deaths are to be expected when one considers the large number of elderly people, often with angina pectoris, who play the game and who would die about as quickly walking along the street. The late Sir James Mackenzie thought golf a suitable game for a man with angina pectoris. He played a good deal himself, even though he had angina pectoris for years. The links at St. Andrews where he played are, how-

ever, rather flat along the shore. He told me that he could not walk the half mile from his house to the golf links without being stopped on the way by the heart pain, but that he could play eighteen holes of golf without trouble if he did not hurry. But if golf causes angina pectoris even when played in great moderation the game should be abandoned, at least for the time being. Some deaths from angina pectoris on the golf links should not have happened.

Horseback riding, swimming, rowing, baseball and tennis all vary tremendously according to the speed, intensity, duration and excitement involved; in moderation, they may be indulged in by cardiac patients who have sufficient reserve. The more strenuous sports, such as basketball, football, squash, racing of all kinds and mountain climbing, should be avoided by people with heart disease, and probably too by most persons of middle age and after. I have seen cases in which squash rackets after the age of 50 years was apparently in part responsible for the onset of angina pectoris. Formal drill and routine setting up exercises may sometimes be helpful and better than nothing, but their monotony and the fact that they are so standardized and unsuitable for the individual case make them of limited value.

MASSAGE

Massage may, even more than passive exercise, be helpful in maintaining a sense of well being and muscular and circulatory tone in bedridden or crippled cardiac patients. It is a method of treatment that is rarely used and probably too little. It is especially helpful in local disturbances of muscles, joints and circulation.

HYDROTHERAPY

Hydrotherapy has a very limited place in the treatment of heart disease. Sometimes patients with chronic circulatory disease, such as angina pectoris, arteriosclerosis and hypertension, do benefit from a course of the Nauheim baths given in a pleasant countryside over an interval of several weeks. Effort syndrome due to fatigue is doubtless even more benefited. Patients with very serious heart disease, including congestive failure, are not suitable subjects for these baths.

The mild to marked glow of the skin resulting from the Nauheim baths indicates a peripheral vasodilatation from the combined action of the bombardment by the bubbles of carbon dioxide gas, of the common salt and calcium brine, and of the changing temperatures and durations of the baths. It is quite likely that this vasodilatation is somewhat beneficial; at least it is pleasant. But it is more likely that the few weeks of restful and pleasant vacation from work and home or other previous environment is more directly responsible than the baths for the improvement going on. I do not agree with Sir James Mackenzie's remark that Nauheim salts put into the bathtub at home will do as much good as their use at a health resort. The pleasanter and more beautiful the health resort, the more rapid and complete will be the so-called cure.

What I have said about the Nauheim bath applies almost equally well to other types of hydrotherapy and to such a method of treatment as the salt rub. Special spring waters used for drinking purposes have an indirect but often beneficial effect on the circulation by their laxative and mildly diuretic effects, but too vigorous purgation by very strong saline waters may be exhausting. Sulphur waters internally or externally, so far as I know, do not have a beneficial effect on the heart.

DIATHERMY

Diathermy has come into vogue recently for the treatment of many conditions. It is an electrical method for the application of heat to the body. This heat is distributed more superficially than centrally because of the circulatory diffusion of the heat internally. It has little or no place so far as is now known in the treatment of heart disease. It sometimes soothes pleural pain or precordial aching, probably as a counterirritant, but it may not prevent the recurrence of angina pectoris. So-called autocondensation (high frequency) in which a more general application of heat to the body is made for the purpose of reducing high blood pressure probably has little or no value. Although the blood pressure may be somewhat reduced, doubtless owing to vasodilatation caused by the heat, such a reduction is usually not marked and temporary, especially when the pressure is high, and perhaps fortunately so. It is not yet known as a matter of fact whether it would be safe and wise to reduce high blood pressure appreciably even if that could be done. Slight hypertension, which often varies spontaneously and rapidly, appears to be more readily influenced than is marked hypertension by high frequency.

ULTRAVIOLET AND ROENTGEN RAYS

Ultraviolet rays have no place directly in cardiovascular therapy. By improving the general condition, they may be of some benefit to the heart.

Roentgen-ray treatment has been suggested both for angina pectoris and for acute and subacute endocarditis. It is yet too early to say what good it may do in such cases, although preliminary reports of deep radiotherapy in endocarditis are hopeful.

CLIMATE AND DIET

Climate as a therapeutic agent in heart disease may be dismissed briefly with the statement that mild southern climates, especially in the winter, are often very beneficial and sometimes save and prolong life, particularly in middle age and later when coronary disease and angina pectoris are present. Young persons may perhaps escape further attacks of rheumatic infection, thus avoiding further heart injury, by living in southern climates, especially in the winter and spring.

There are no particular diets for cardiac patients except perhaps the Karell diet devised many years ago for the treatment of cardiac edema, and consisting of 800 cc. of skimmed milk in twenty-four hours (200 cc. four times daily) and a new diet recently advised by Smith, Gibson and Ross.[1] The Karell diet is not only a semistarvation diet calculated to rest the digestive tract and circulation, but also by its low fluid content it favors a decrease in edema. The Karell is a severe diet and cannot be used as a matter of routine. It often helps at the beginning of the treatment of a waterlogged patient, but it may have to be modified quickly after a day or two or even at the very beginning. There may be such a demand for fluid and fuel by the patient that the restricted intake and food value of the Karell diet may cause not only suffering but actual harm.

Generally, repeated small meals at frequent intervals, at first of liquids, later of liquids and soft solids and finally a light general diet, are advisable in the treatment of heart disease, varying according to the degree of heart failure. No particular food is to be advised

1. Smith, F. M.; Gibson, R. B., and Ross, Nelda G.: The Diet in the Treatment of Cardiac Failure, J. A. M. A. **88**: 1943 (June 18) 1927.

or forbidden. Heavy meals should be avoided, and hearty dishes, fried foods and heavy pastries. Meat and salt should not be denied, but they should be used only in moderation; meat, for example, once a day when the condition of the patient permits. The desires of the patient should always be consulted so that he may enjoy more what he is allowed to eat. For hypertension the same rules apply as for congestive failure or angina pectoris. There is no specific diet so far as I know. Meats and salts need not be forbidden, though both should be used sparingly. Patients with renal insufficiency may benefit by low protein and low salt diets. The diet recommended in the treatment of cardiac failure by Smith, Gibson and Ross is a liberal one to allow sufficient fuel value; it contains 44 Gm. of protein, 110 of fat and 222 of carbohydrate, and has an energy value of 2,100 calories.

FLUID INTAKE

Liquids may be restricted as need be. If edema is present and there is no hardship for the patient in keeping the fluid intake at 1,000 cc. in twenty-four hours, it may be so ordered. Great thirst, hot weather and increased perspiration may demand a larger intake in spite of edema. I have seen decided harm follow too rigid a restriction of fluids. Much judgment must be exercised in decisions about individual cases. At the other extreme, excessive fluid intake may be injurious when the heart is not strong. Forcing fluids because of infection or local disease of the urinary tract may be helpful in clearing up infection or in improving kidney, bladder or urethral conditions, but in the process the heart may become insufficient and edema may appear. A reduction of intake then may straighten matters out, as there will still be sufficient fluid to flush kidneys and bladder without overtaxing the heart. A drop in intake from 4,500 to 3,000 cc. (150 to 100 ounces) daily may make a great deal of difference. This applies particularly to elderly men with prostatic disease and operation.

SURGICAL INTERVENTION

Surgical intervention in cardiovascular disease can be discussed briefly. I have already mentioned one of the chief benefits that may come to any cardiac patient through almost any operation if not too severe. The rest enforced by the operation may restore circulatory balance or dispel angina pectoris. Only rarely are cardiac patients poor risks for operation, though, of course, only necessary procedures should be carried out in such cases. Victims of syphilitic aortitis and coronary thrombosis are poor risks at all times and the strain of anesthesia and surgery may be too great for them, although they too must be considered individually.

Cervical sympathectomy for angina pectoris is still in the experimental stage. Some cases have been benefited, but it appears that at least as many, or even more, have not been helped. Various procedures, simple or much more complicated, unilateral or bilateral, have been recommended, all with inconstant results. At times, the simple operation of removal of the left superior cervical ganglion alone has resulted in considerable relief; at times, a far more extensive operation has failed. Whether in the successful cases the pain alone is relieved or whether the mechanism causing the pain is abolished we do not yet know. Of ten cases that I have seen at the Massachusetts General Hospital, in eight of which this operation, mostly of the simplest nature, was done by Dr. E. P. Richardson, and elsewhere in the other two cases (one by Leriche of France), there was no relief at all in six, except for slight temporary improvement resulting from the enforced rest at the time of and following the operation; two patients were moderately benefited; one was apparently completely relieved, and one was much relieved of the intensity but not of the frequency of the attacks of the angina pectoris. The last mentioned patient died of cardiac congestive failure about six months after operation (by Leriche), and five others of the ten have also died shortly after, or within two or three years of the operation. Much more must be learned about the nerve supply of the human heart before the whole story will be known. Incidentally, there may be disagreeable nerve disturbances left as sequelae by the operation. At present, it may be said that cervical sympathectomy should be reserved for cases of obstinate angina pectoris not helped medically.

Another procedure—paravertebral injection of alcohol into the spinal nerve ganglions—has also been recommended for the treatment of obstinate angina pectoris. It quite evidently is intended to relieve the symptom of pain and not to prevent the mechanism of angina. A small series of cases, successful for several months at least, has been reported from New York, and Dr. James C. White has made the injections with some success in four of our cases at the Massachusetts General Hospital. For several months the first patient so treated has been almost free from angina pectoris, which before the procedure had been intolerable. He suffered, however, from very disagreeable hyperesthesia for a few weeks directly after the injection.

Valvulotomy for marked mitral stenosis has been attended by too high a mortality in the few cases done so far to be considered advisable. Periarterial sympathectomy, although apparently helpful in a few cases of disturbances of local circulation, has been in the main so disappointing that it has been largely abandoned.

Pericardial paracentesis is an important procedure, at times life saving or resulting in marked relief of symptoms due to a large rapidly collecting effusion, but it is rather infrequently necessary. When there is pus in the pericardium, incision and drainage may save a few lives. Injuries of the heart by gunshot or stab wounds may be repaired surgically with recovery, as shown by an impressive list of cases recorded in the literature, especially during the World War.

Venesection may save lives by relieving the heart temporarily of some of the burden of its work of pumping more blood than it is capable of doing at the time of acute or increasing failure. Now and then its effect is dramatic, though it is not often needed. The removal of a few hundred cubic centimeters of blood from an arm vein may clear up symptoms of pulmonary edema and relieve visible venous engorgement and cyanosis.

SUMMARY

In the treatment of heart disease, the most important relief frequently comes from agents other than drugs. Rest and recreation, physical and mental, exercise, climate, psychotherapy, physical therapy, regulation of the diet and of the fluid ingested, surgical intervention and venesection all have a place of variable importance in the therapy of acute and chronic heart disease.

[EDITORIAL NOTE.—This paper, together with the three papers by Dr. Eyster, Drs. Hatcher and Weiss and Drs. Levy and Mackie, which precede it, in addition to the two papers by Dr. Read and Dr. Conner, to appear next week, constitute a symposium on the treatment of heart disease. The discussion will follow the papers to be published in the next issue.]

TREATMENT OF NERVOUS INDIGESTION *

WALTER C. ALVAREZ, M.D.
ROCHESTER, MINN.

Having in mind that ancient recipe for rabbit stew which begins with the injunction, "first catch your rabbit," I begin this paper with the suggestion that you first be sure of your patient's neurosis before you begin to treat him for it; be sure that he is not suffering from something else besides nerves. When one sees how often the skilled gastro-enterologist with every form of technical assistance at his command makes the mistake of treating as a "neurotic" some one who has gallstones, tumor of the cord, incipient tuberculosis, or cancer of the stomach, the need for caution becomes obvious.

If only, then, because we may be mistaken, we should be particularly careful to avoid conveying to our patients the impression that we think there is nothing the matter with them. They may be neurotic, hypersensitive and overcomplaining, but that does not render them immune to organic disease. In fact, years of suffering from organic disease is often the cause of the very querulousness that excites our distrust. Time and again when I have learned of one of my blunders I have gone back over the patient's record and have been surprised to find there every indication pointing to the diagnosis that should have been made. The trouble evidently was that I did not believe what I was told; I listened to so many versions of so many minor complaints that I wound up by discounting almost everything that was said about the major ones. If only I had not seen the patient, I would have made the correct diagnosis.

Hence it is that the longer I practice medicine and the more I see of my mistakes, the more inclined I am to give the patient the benefit of the doubt, and the less willing I am to believe that he is spending his time and good money for the fun of telling his troubles. There are doubtless some who like to do this, but even they are not normal, and instead of being incensed or contemptuous, we should be sorry for them, and ready to smile with them at some of the things they do.

Most of those who seek relief have really been suffering and have been driven to our offices by some form of distress. Even when the most careful examination does not reveal anything, we must choose our words with care to avoid giving the impression that we think the symptoms are wholly imaginary. Distress arising in a tired or unbalanced brain can doubtless be more trying than that arising in a diseased stomach, and I mean it when I tell many of my neurotic patients that I would rather suffer a broken leg than go through what they are experiencing. I find it helpful to point out to them that although it is obvious that the digestive tract is not functioning properly, the chances are that the most careful exploration would not reveal anything that a surgeon could operate on. Even that does not mean always that there is nothing organically wrong. When I think of the millions of microscopic structures whose functions might fail and the countless billions of cells whose chemical processes might be upset, I marvel, not that we sometimes fail to demonstrate gross pathologic changes in the diseased body, but that we do so often find them.

Our fondness for calling patients unpleasant names, such as "neuro," "neurasthenic" and "hypochondriac," doubtless makes for us innumerable enemies, and it certainly swells the ranks of those who go in for the various forms of quackery. As we ourselves sometimes discover, when we fall ill with vague and subjective symptoms, it is heartbreaking to have one consultant after another treat our troubles as a joke, and but thinly veil his impression that we are making mountains out of molehills. And later what a feeling of justification comes over us when some one discovers that, in addition perhaps to a fatigue neurosis, we did have an ulcer, hypertension, or something else radically wrong.

Hence it is that the handling of the patient, the results of whose examination are negative, requires the greatest care, tact, sympathy and kindness. After reviewing the record and explaining that nothing has been found that would justify exploring the abdomen, I find it well to admit that although this should occasion considerable rejoicing, it also has its disappointing side. I try to assure the patient of my confidence in the existence of his symptoms, and I remind him that digestion can doubtless be upset in sensitive persons by strong emotion, fatigue, improper methods of eating, or constipation.

If the patient has been overworking and losing a great deal of sleep, I picture to him thousands of delicate brain cells crying out for rest; I suggest that he give heed to their complaint, that he cut down on work, try a simpler diet and better methods of regulating the bowels, and see what happens. If everything clears up, we shall be happy; if some of the symptoms disappear and others remain, or if new ones appear and others get worse, the correct diagnosis may either become obvious or another careful examination may show what is wrong. One great advantage of this method is that I have not burned my bridges behind me. If things go wrong, if new symptoms develop and the diagnosis becomes obvious even to a tyro in medicine, I shall not be humiliated by having my mistake corrected, perhaps by some unfriendly critic, and I shall not have earned the contempt and enmity of the patient and his family. The most dangerous thing we can do is to try to reform a supposedly neurasthenic person by giving him a harsh "dressing down." It doubtless does good in some cases, but I would rather let the other fellow try it. For one person who can be driven in anger there are hundreds who can be led with sympathy, understanding and friendliness. The finest physician is kindly and generally able to see something lovable in the most crabbed of his patients. When he can do this they feel it and are likely to respond with the best that is in them. The physician who cannot find it in his heart to like these patients, to sympathize with them, and to take endless pains in trying to help them had better leave them alone. One of the best ways of preparing for this work is to have a nervous breakdown oneself, but not every one can do this.

The treatment of the functional disorders of digestion may be discussed under four headings: (1) psychotherapy and instruction in mental and physical hygiene; (2) physical therapy, exercise and massage; (3) diet, and (4) drugs.

PSYCHOTHERAPY AND INSTRUCTION IN MENTAL AND PHYSICAL HYGIENE

The first and often the most important step in the psychic treatment is taken when the physician makes a complete and careful physical, roentgenologic and

* From the Division of Medicine, Mayo Clinic.
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laboratory examination. If this does not reveal signs of serious disease, many persons immediately lose interest in their symptoms and go away satisfied. Another important factor in the psychic treatment is the taking of a good history, and especially a history that brings out all the details of family and business worries, of domestic infelicity or of the phobias that so often are at the bottom of the trouble. Unless these things are done, it is not only useless but often criminal to tell the patient not to worry. Some consult us simply because they have been shocked by the sudden death of a friend or relative. They fear that they too have cancer or heart disease, but they will not admit it, and come complaining of some minor ailment. Especially when dealing with older patients, it is often well to say at the close of the examination: "As we examined you we had always in mind the possibility of cancer beginning somewhere, and we are now glad to say that nothing suspicious has been found."

If the patient is worrying we must not simply tell him to stop worrying, but must delve to the bottom of his difficulties because it may be that they have no possible solution, and that if we were placed in his predicament we should be equally sick in mind and body. Under such circumstances it is silly and heartless to tell him to do what we could not do. This is particularly true when the main source of anxiety is poverty and debt, or a marriage that is going on the rocks. Particularly difficult to deal with are the women who cannot make up their minds about getting a divorce, and those who lead a cat-and-dog existence with their husbands but who are chained to them by love for their children. The wrangling at mealtimes seems particularly detrimental to the digestive processes, and as some wise old Jew once pointed out, "Better is a dry morsel and quietness therewith than a house full of feasting with strife" (Prov. 17:1).

Fortunately, much can be done in many of these cases by giving the patient the mental purgation that comes with the pouring out of secret worries into a sympathetic ear. The physician can often help these persons by advising them wisely, and by leading them out of a maze of muddled thought to the point where they can forgive and forget, and acquiesce to things that cannot be cured. For years I have kept in my office a copy of Trudeau's autobiography with a bookmark at page 318 in order that I may turn quickly to his remark that he had learned from his patients that "the conquest of Fate is not by struggling against it, nor by trying to escape from it, but by acquiescence." The asthenic person, the person with mucous colitis, or the one to whom nature has given a "raw deal" can often be made over into a useful and happy member of society if he can be taught this lesson of acquiescence: to stop looking for a cure and instead to settle down to get along as best he can with his handicap.

The next thing in most cases is to see how a rest can be obtained with the least expense and loss of income. If a vacation is taken, it must be one that will bring the patient back better off than when he left. Too often our vacations are of the type that caused the Irishman to remark plaintively, "How happy we'd be if it weren't for our pleasures." If a man cannot well leave his business, he can often, for a month or two, answer his mail and confer with his assistants in the mornings, and can then spend his afternoons at home or on the golf course. I have seen such excellent results from this type of resting that for business men I prefer it to a complete vacation. The mother with several small children and few resources can also be helped tremendously if she is taught to go back to bed after the children are sent off to school. She may have to continue with mending and sewing, but even so, a few weeks of mornings in bed will often work a miracle.

A rest-cure in a sanatorium, with or without overfeeding, is often helpful if the patient can afford it without worrying about the expense. Unfortunately, it is beyond the reach of those who need it most. Unless the sanatorium is a good one, the cure will go much better in the home of a devoted relative. Hospitals unfortunately ignore the fact that the sick and nervous are slow in getting to sleep, and are helped most by the rest that they get between 5 and 9 in the morning. Instead of allowing such rest, they get the patients up at 6 or 7 o'clock, so that everything can be done and out of the way for medical rounds at 8; it is fine for the physician and the chef but it is hard on the patient.

Another difficulty with hospitals nowadays is that many of the dietitians are obsessed with the desire to stuff their patients with vitamins and iron in the form of greens, spinach, salads and fruits. They forget that their guests are going to be with them for only a few days or weeks, and that they could easily get along during that time without any of these substances, and in spite of everything a mere physician may say or do, he is likely soon to find his patients back on spinach, salads, fruit and bran muffins. Fortunately fads are self-limited diseases, so the time is doubtless coming when spinach will retire into the background, and milk toast, custards and calf's-foot jelly will again appear on the tray of the invalid.

The sick who are so situated that they must either keep at work or starve can often be taught to hoard their small stock of energy and to live within the limits of their nervous strength. Many tire themselves out by putting too much energy and emotion into trivial tasks. Women in particular must be exhorted to break themselves of the habit of getting all stirred up over little things, and of reviewing at great length painful or annoying experiences which a more sensible person would promptly forget. Others must be taught to go to bed earlier at night and some must for a time retire from leadership or active participation in church, civic or social work. Some can get their grip again if they will only rest in bed on Saturday afternoons and Sundays.

As I have already pointed out, many take their holidays too strenuously: they drive too far in automobiles, they work too hard in their gardens, or they do things that leave them more tired on Monday morning than they were on Saturday night. They must learn the truth of Mosso's statement that all their energies come from one source, and that when mentally tired it is not wise to exercise so strenuously as still further to take away from a small store of strength.

THE SECURING OF SLEEP

In innumerable cases all the patient needs to bring back his health is relief from insomnia, but unfortunately physicians often fail even to ask about sleep, and thus miss the chance to work a cure. The neurotic person needs to get away from his tumultous and bothersome thoughts; he needs rest, and it should be obvious that little can be done for him until he learns, again, to sleep. Strange to say, many physicians are not only uninterested in the insomnia but they are much

disgusted when some one prescribes drugs for its relief. Time and again I have brought a nervous patient almost back to health and full-time work, only to see her plunged back into insomnia and despair by the angry protests of some medical friend of the family who raged about "weak-kneed dope fiends" and prophesied disaster.

To be sure, something can often be done to relieve insomnia by teaching the patient to keep his mind off disturbing thoughts, to avoid mental work or exciting conversation after dinner, to take a warm bath and a little food on retiring, and to go to bed earlier. But often these measures fail, or the worries and discomforts that have caused the insomnia cannot be removed. The less the patient sleeps one night, the less able he is to sleep the next, and the only thing that will break into the vicious circle is a sedative drug. The man with a broken leg is not held up to scorn if for a time he uses a crutch, so why should the victim of insomnia be scolded when he uses a somewhat similar device?

Unfortunately, to the layman and to many physicians a sleeping draft still means opium or one of its derivatives, but in this enlightened age this should not be the case. Morphine is a good pain reliever but a poor sleep maker. Its effect is transient and often unpleasant, and its use in insomnia would be worse than foolish. Even after operations I think surgeons would do well to use more barbital and less morphine; its effects last much longer, it is a sedative to the vomiting center, and it lacks the unpleasant by-effects of morphine. In the form of soluble barbital it can, if necessary, be given intramuscularly.

These newer synthetics have no relation to morphine; they have none of that "kick" that makes the taker wish to repeat his experience, and except in the case of the markedly psychopathic person, I am sure they are perfectly safe. I have been prescribing them for twenty years and have yet to see an habitué in my own practice. Actually, in a practice limited largely to the diagnosis and treatment of gastro-intestinal disease, I have found one of the most useful drugs to be not pepsin or bismuth, but carbromal, a sleep producer. Carbromal (bromdiethylacetylurea) is used in doses of from 0.3 to 1 Gm. (5 to 15 grains). In those who are sensitive to drugs, 0.3 Gm. at bedtime will make all the difference between a restless and a restful night. Barbital, or veronal (diethylmalonylurea), produces headache in some persons and a little "hangover" in the morning, especially if it is taken after midnight. All these drugs are best given early when the patient goes to bed. Phenobarbital (phenylethyl barbituric acid) can be given day or night in doses of from 0.05 to 0.2 Gm. (0.75 to 3 grains).

There are a few highly neurotic and psychopathic persons who do not react well to any of these barbituric acid derivatives; instead of becoming quiet they get excited, and if they doze off to sleep they soon awaken with nightmares. They often do better on chloral. The only trouble I have ever had with these drugs has been in trying to get the patients to use them long enough. They are afraid, they are influenced by alarmed relatives, physicians and nurses, and they give up the "crutch" before they have learned to walk alone.

Certain nervous and asthenic patients must be guided into less laborious forms of employment, and others must be induced to change their mode of living so that they can get better food and happier surroundings. There is no detail of the patient's life so trivial that it may not play a part in keeping up a neurosis which is expressing itself in some form of indigestion, and the physician must find what it is and if possible correct it.

PHYSICAL THERAPY, EXERCISE AND MASSAGE

Many of the weak and partly bedridden patients can be put on their feet, literally and figuratively, only with the help of an intelligent, cheerful and masterful physical therapist who can build their strength until they can stay up all day. Each day the invalid is given something to do, something to think about, something to hope for, and some one with whom to talk. Not all persons, however, are helped by massage. Only those "pussycats" who love to be stroked will thrive on it; those who are ticklish or who hate to be touched by strangers will be made worse. Stoutly built men who were once athletic but who have since become flabby and fat can often be helped by a course with a trainer. Ultraviolet radiation, in my experience, helps in raising resistance, improving appetite and putting on weight.

These physical therapeutic measures are invaluable in many cases if only because they keep the patient busy and hopeful and bring him back repeatedly under the influence and guidance of the physical therapist and the physician. They keep him out of mischief and out of the hands of the quacks. One of our biggest mistakes in medicine today is that we have allowed others to monopolize these modes of treatment. One of the great advantages of having the work done under our supervision is that we can be watching the patient, learning more about his troubles, and seeing him on occasions when he has something definite and telltale to show us, like a fever, a point of tenderness, or a tinge of jaundice.

DIET

Often the main thing we have to do is to encourage the patient to eat. Dyspeptic patients tend to cut out first one article of food and then another until little is left. When we are satisfied that the trouble is a pure neurosis it may be best not to prescribe any diet; let the patient see as clearly as possible that his help must come through rest and mental discipline and not from drugs and special foods.

Nowadays one of the simplest ways of helping dyspeptic persons is to take away their bran mush and their muffins. The enthusiast on bran forgets that he is prescribing the substance simply because it is one of the most indigestible to be found in nature; it was especially designed to carry seeds unchanged through the digestive tracts of the herbivores. And yet they call it a health food! Those who, except for constipation, have a perfect digestion may be greatly helped by the addition of roughage to the diet, but others who have short, inefficient and irritable bowels get into trouble; they fill with gas, they are distressed, and some go rapidly down hill. I remember one woman in particular who for ten years had kept herself in fair health only by sticking to the smoothest diet, the details of which she had worked out for herself by the method of trial and error. A physician then talked her into taking bran for her constipation and in a few weeks she had to be operated on for the relief of intestinal obstruction. A section of ileum was found twisted, bound to the stump of a partly removed uterus, greatly narrowed, and nicely packed with the bran. It should be obvious that roughage cannot be prescribed for every one, and at times the factor of digestibility in a diet must come first.

When prescribing a diet for a man or a woman with a functional disturbance of digestion it seems to me that our first thought should be to give the tract a rest. We cannot give it a complete rest because that would weaken the patient; generally he has to keep at work; he often needs strengthening, and sometimes he needs fattening. Under the circumstances we must think more of what we are to give him than what we are to take away. Furthermore, many dyspeptic persons are so handicapped either congenitally or by serious abdominal disease in childhood or youth that they will probably always have to be careful about what they eat. Hence it is that we must not prescribe too restricted or monotonous a diet; we must give enough food of all kinds so that if the diet proves helpful it may be followed for years.

Long ago, when I first began the study of dietetics, the subject seemed to me hopelessly complicated. I could find diets for almost every disease, but authorities did not always agree, and I could seldom learn why they approved one food and forbade another. Sometimes a patient would show me several diet slips given him by as many physicians, and as I read the widely different instructions I wondered how he still could retain confidence in the profession. In my perplexity I began to examine hundreds of stools to see for myself what substances commonly escape digestion, and I found that many of the patients who were complaining of flatulence and abdominal discomfort were bringing stools full of coarse, undigested material, consisting mainly of cellulose. I then asked these persons either to stop eating the offending substances or else to have them puréed, and as soon as they began to bring me stools which were smooth and pastelike in consistency, some of them began to report relief from flatulence and distress. Many had already discovered that they could not digest vegetables and raw fruits but thought this was due to the acids contained.

On searching through the literature, I found that the virtues of a smooth diet had been known in the past to many physicians, including the Father of Medicine. I thought at first that they were to be ascribed to the fact that cellulose is so indigestible, and its presence so likely to interfere with the action of the ferments on starches and other foods; but later, when I learned that food goes down the bowel following a gradient of muscular irritability and rhythmicity, that in the sick this gradient is in places leveled or reversed, and that liquids will flow through reversed places while solids will not, I saw that there was still another way in which the smooth diet might be helpful. This is shown most strikingly in the experiment in which a section of bowel is cut out, reversed end for end, and the continuity of the tube restored with two anastomoses. As has been shown repeatedly, such a reversed loop will transport fluids but never solids. Evidently the original gradient of muscular force remains unchanged in the reversed segment, so it is like an uphill stretch in a pipe line that will transmit water but not stones. Animals with such reversed loops live comfortably only so long as indigestible articles can be kept from them, and when they die the necropsy always shows that a mass of straw and wood and bone has accumulated and that it has produced obstruction at the site of the upper anastomosis.

We can therefore say to a man with a flabby tract or a tract with irritated, narrowed or reversed stretches that he should avoid eating cellulose-containing foods for much the same reason that he avoids putting paper, bits of wood, and cotton down a drain which has a poor drop or, somewhere in its course, an uphill stretch.

But even if we disagree as to the mechanisms involved, the fact remains that since the time of Hippocrates a smooth diet has been found to help many sufferers from indigestion. It is a good diet to prescribe while one is studying a patient and whenever one is in doubt about the diagnosis. I hope the day will come when something like it will be made the basic or routine diet in hospitals. At present the full diet with salads, fruits and vegetables is basic and is put on the trays until the physician orders something else. As a result I have seen the roughest and most indigestible of foods on the trays of persons just beginning to eat again after severe operations on the stomach and bowel. This sort of thing might occur less frequently if the full diet were to be supplied only on special order. Some hospitals go to the opposite extreme and supply a soft diet until something else is ordered; but that works badly when the physician forgets and some meek fellow with a big appetite and, let us say, a smashed foot is left for days on milk toast and gruel.

The average physician who has not had much training in dietetics is inclined too often to fall back on the use of a milk diet. I think this is unfortunate because in my experience the invalid who can digest milk will do just as well on moderate amounts of food chosen from the smooth diet list. Besides, milk does not agree well with many persons: It makes them "bilious" and constipated; it is too bulky, and it leaves a large residue in the lower small intestine.

Following is a list of instructions and foods such as I often give to patients, when recommending the smooth diet:

This diet is based not only on practical experience but on a number of scientific principles. We have no ferments in the digestive tract which will dissolve cellulose, that is, the fibrous part of vegetables and fruits. Most of this material is quite indigestible, and if we eat much of it we throw a heavy burden on the bowel. This fiber interferes with the digestion of starches and predisposes to flatulence.

If there happen to be narrow or irritated places in the bowel, or kinks with adhesions, the fiber may cause clogging and back pressure. The ideal diet in such conditions is one which leaves only a small liquid residue which can trickle past the obstructions; in this way it will often give prompt relief. This smooth diet is indicated also when the bowel is irritated, overly active and responsive to every stimulus.

It should be tried out faithfully at first, and then if it works well other foods may be experimented with, one at a time. You may have learned by experience that some of the foods allowed on this list are hurtful to you; in that case leave them alone.

If you are to give this diet a fair trial, eat no coarse foods with fiber, skins, seeds or gristle. Avoid particularly salads with celery, tomatoes, cucumbers and pineapple, many of the green vegetables, raisins, berries, jams full of seeds, nuts, and many of the raw fruits. Beans, cabbage, onions, green or red peppers, melons, cucumbers and peanuts are notoriously gassy. If you are living in a boarding house you can stick to this diet by simply avoiding the forbidden foods and eating more of the digestible ones which are put before you.

Avoid sugar in concentrated form and take no candy or other food between meals. Hot cakes and waffles might not be bad if they were not eaten with so much syrup. Fried foods are not bad if they are properly fried, that is, totally immersed in fat at the right temperature. Avoid eating when in a rush and when mentally upset. Family rows should be held away from the table. Chewing gum may cause distress, as much air is swallowed with the saliva. Digestion is greatly helped by a good chewing surface. If there are any gaps in your teeth have your dentist fill them with bridges. Purgatives often cause flatulence and distress in the abdomen.

The following are suggestions for breakfast: orange juice, grapefruit (avoid the fiber in the compartments); cantaloup and melons are inadvisable. Coffee, if desired, is allowed in moderation; it sometimes causes flatulence. If you are sensitive to caffeine try kaffee hag or instant postum. Chocolate, cocoa or tea, one or two eggs with ham or bacon (avoid the tougher part of the bacon), white bread, toast or zwieback with butter, any smooth mush such as farina, germea, cream of wheat, cornmeal or rolled oats,[1] puffed cereals and cornflakes are also allowed. Shredded wheat biscuits and other coarse breakfast foods are not allowed. Bran is particularly harmful. Graham bread is permitted but not the coarser whole wheat bread.

Suggestions for lunch and dinner: In fruit cocktails avoid the pieces of orange and pineapple. Broths, bouillon, cream soups and chowder are allowed, also meat, fish or chicken, squab or game, excepting duck (avoid the fibrous parts and gristle). Veal may be tried; it is not digested well by many persons. Eat no smoked fish or pork. Crab and lobster had better be left alone. Oysters and sausage may be tried later.

Bread and butter are allowed, and hot biscuits if they are made small so as to consist mainly of crust. Rice, potatoes, baked, mashed, hashed brown or French fried, are allowed; and later may be added sweet potatoes, hominy, tomatoes stewed, strained and thickened with cracker or bread crumbs, well cooked cauliflower tops with cream sauce, asparagus tips, Brussels sprouts, squash, beets, turnips, creamed spinach, Italian pastes, noodles, macaroni and spaghetti cooked soft, purées of peas, beans, lentils, lima beans or artichoke hearts. All skins or fiber should be removed by passing the food through a ricer. Sweet corn may be used if passed through a colander. There are practically no other vegetables that can be puréed to advantage. String beans[2] are allowed if they are young and tender.

No salad should be taken at first. Later you may try a little tender lettuce with apples or bananas, tomato jelly or boiled eggs. Mayonnaise and French dressing are allowed. Potato salad without much onion may be tried.

Suggestions for dessert are: simple puddings, custards, ice cream, jello, plain cake and canned or stewed fruits, particularly pears and peaches. Cottage cheese is permissible; other cheeses often cause trouble. Apple, peach, apricot, custard and lemon cream pie may be tried if only the filling is eaten.

In case of constipation, stewed fruit may be taken once or twice a day. In winter the dried pared fruit may be used for stewing. Prunes are probably the most laxative of fruits and if eaten every other morning they will relieve the average case of constipation. They should be cooked slowly until they almost go to pieces. If the skins are still tough they should be discarded. Apple sauce is much more palatable if made from unpared and uncored apples. The sauce is strained later. It may be mixed with a little tapioca or sago. The apples may be baked. Apples, even when cooked, often cause distress. Blackberries and loganberries can be stewed and strained and the sweetened juice thickened with cornstarch. This makes a delicious dish with the full flavor of the berries. Later you may try fully ripe pears and peaches.

Make no effort to drink water. Be guided by your thirst. Avoid excessive use of salt or other seasoning. If you wish to gain in weight eat as much cream, butter, fat and starch as you can. If you wish to lose or to stay thin, live largely on vegetables, fruits and salads, with a moderate amount of lean meat.

As will be seen, the essential point is that the patient does not eat coarse foods, with fiber, skins, seeds or gristle. He must not eat salads, celery, tomatoes, cucumbers or pineapple, and must avoid many of the green vegetables and raw fruits, and such things as raisins, nuts and jams full of seeds. It is also wise to cut down on the amount of sugar, and to interdict all sweets between meals. The diet should be tried faithfully for a time and if it works well it can be adhered to; if it does not give relief within a few weeks, the trouble is probably not one that is going to be relieved by any form of dietetic restriction.

If the patient is underweight, it may be helpful to add plenty of cream and butter to the diet. If constipation is present, it is essential that it be regulated with the help of the mildest measures, such as enemas of physiologic sodium chloride solution or small doses of magnesium oxide. Until this is done one cannot tell how much of the distress complained of is due to constipation or to the abuse of purgatives. The most tasty and perhaps the best bulk producer for the constipated person is the prune. In my experience some sufferers from constipation can be completely cured by a good proctologist who will heal fissures and infected crypts and will remove irritable hemorrhoids.

In order that I be not accused, as I often am, of being a crank with one idea, I want to say here that I am well acquainted with the virtues of a rough diet, and I often prescribe it for the constipated and the obese patient. Some day I may write an article on the use of roughage in the diseases in which it is helpful, but just at present I happen to be talking about the cure of those with weak and defective digestion.

One of the most valuable features about a short course of careful dieting is that if the patient does not respond, or if while in the best of condition he or she comes down with an acute attack of pain and indigestion, the physician can be sure that there is something organically wrong. When dealing with the type of woman who takes a purgative and several enemas a day, one must have the help of a good nurse to see that orders are being carried out. These persons love their enema bag as a morphine fiend loves his hypodermic, and it takes some time and effort to break them of a troublesome habit.

DRUGS

The use of hypnotics and sedatives has already been discussed. Most of those patients who are greatly helped by alkalis such as sodium bicarbonate or magnesium oxide will, I think, be found to be suffering from ulcer or some other organic disease. We still need better carminatives. The one I have found most useful is peppermint. The most pleasant preparation to take is crème de menthe, but that is now inaccessible except in the nonalcoholic form. One can, however, duplicate the true cordial fairly well by diluting with simple syrup the French preparation alcohol de menthe. There are many carminative tablets on the market, most of them containing aromatics of various kinds with some sodium bicarbonate, and occasionally some charcoal. It is doubtful whether the latter ingredient, when wet, can absorb any gas. In most cases the gas is probably in the descending colon and splenic flexures, and then the best carminative is an enema.

I have little faith in tonics and bitters and seldom prescribe them unless I see that the patient is otherwise going to feel neglected. I think their value is largely psychic, and for that reason when I do prescribe one I like it to have an impressive name like "beef, iron and wine." Under the influence of those magic words a man surely ought to eat more than if he thinks he is getting only the prosaic iron, quinine and strychnine. Intramuscular injections of cacodylates may do some good directly, but I think often their main use is to bring the patient back at frequent intervals for observation and encouragement.

Incidentally, it seems to me that strychnine should be the last drug on earth to give to a nervous person.

1. A fine oatmeal can be obtained by calling for Robinson's Scotch Groats.

2. Large tender string beans which can be used as a vegetable or salad can now be obtained in cans.

The poor soul is already on edge, with reflexes exaggerated, senses hyperacute, and the doorways in brain and cord open to every incoming stimulus. What is wanted is some derivative of bromine or barbituric acid which will close the doors and quiet the reflexes, and not a drug like strychnine, which is preeminently a sensitizer and a connector of nervous pathways.

I doubt whether there are many gastro-enterologists today who ever use pepsin or pancreatin unless it is in cases of definite gastric or pancreatic achylia. As Fermi [3] showed years ago, they have no influence on gastric digestion unless given in enormous amounts. Carlson and his associates were unable also to demonstrate any effect from the various bitters. Bismuth is another drug which the specialist now seldom uses except in cases of diarrhea, and then he gives it in tablespoonful doses. Belladonna in physiologic doses is so annoying to many patients that I rarely use it.

The drug that we really need most in gastro-enterologic practice today is one that will restore the downward current in the digestive tract and will put a stop to nausea, belching and acid regurgitation. Unfortunately, we have many drugs that will reverse the current, but with the possible exception of calomel, I do not know of any that can be counted on to restore its downward trend. Minor degrees of nausea can sometimes be relieved by lowering the irritability of the vomiting center with small doses of carbromal or phenobarbital.

SUMMARY

Before treating a patient for nervous indigestion the physician must be sure that this is the correct diagnosis. Many persons are suffering from organic disease which later becomes apparent; hence it is unfair and unwise to call them unpleasant names. A complete examination must be made before the physician is justified in reassuring his patient. Such an examination is one of the best vehicles for psychotherapy.

The history must be gone over repeatedly until the physician has gained a thorough understanding of all the factors likely to produce a neurosis. When the condition has been diagnosed, such measures as rest, physical therapy, diet and drugs should be considered in its treatment.

ABSTRACT OF DISCUSSION

DR. G. H. WOOD, Detroit: The point I wish to emphasize is that in considering these problems we need to think not only of the patient, but also of the physician himself. I have known of cases in which the physician himself, or some member of his family, has been sick and badly in need of treatment, and was unable to get it on account of the conditions that Dr. Alvarez has brought out—cases in which such signs as hematuria, clay colored stools and various real symptoms have been overlooked by first class men, and the patient has been patted on the back, told to cheer up, forget his worries and go on his way rejoicing.

3. Fermi, Claudio: Ueber die Verdaulichkeit der Speisen im Magen in Beziehung zur Hygiene, Arch. f. Physiol., 1901, supp., pp. 1-83.

Vital Capacity in Pulmonary Tuberculosis.—Vital capacity tests were made by Concepcion on 116 normal persons between the ages of 18 and 30 years, and on fifteen tuberculous patients between the ages of 27 and 54 years. The mean vital capacity observed in the 116 normal persons was 3,275.86 cc. ± 31.8148, while that of the fifty-one tuberculous patients was 1,631.38 cc. ± 33.74. The mean vital capacity of the tuberculous patients was only 49 per cent lower than normal. The average lung capacity of the normal persons per square meter of surface, was 2,022.18, and in tuberculous individuals, 965 cc.—Concepcion, I.: *Philippine Islands M. A. J.* **7**:91 (March) 1927.

CALCIUM CARBONATE AND CALCIUM BICARBONATE

HYDROGEN ION CONCENTRATION OF SATURATED SOLUTIONS IN WATER

JOHN WARREN WILLIAMS, PH.D.
AND
JOSEPH A. CHUCKA, B.S.
MADISON, WIS.

Loevenhart and Crandall [1] have recently suggested the use of calcium carbonate in the treatment of the gastric hyperacidity syndrome. The reason for suggesting it was that calcium carbonate is a very insoluble substance and that the suspension is apparently neutral in reaction, although it has a high neutralizing power for acids. In this connection we decided to determine the hydrogen ion concentration of suspensions of calcium carbonate in water in the absence as well as in the presence of carbonic acid. Our search of the literature failed to reveal any study of this question.

PREPARATION OF SOLUTIONS

The calcium carbonate used was prepared by precipitation from calcium hydrate solution with carbon dioxide. The saturated calcium carbonate solution was prepared by washing the precipitated salt with an abundance of conductance water, after which it was dissolved in conductance water free of carbon dioxide. After the solution had been allowed to come to equilibrium at 25 C., the clear liquid was decanted and used for the various determinations.

The calcium bicarbonate solution was prepared by passing pure carbon dioxide gas through a portion of a calcium carbonate suspension, prepared in the manner described, until equilibrium was reached.

EXPERIMENTAL RESULTS

The p_H values of the various solutions were determined by the usual potentiometric methods. In all cases the measuring instrument used was a Leeds and Northrup Type K potentiometer. In calculating the p_H values given in the accompanying tables, the value of the tenth-normal potassium chloride-calomel electrode was taken as 0.337 volt, and that of the normal potassium chloride-calomel electrode as 0.283 volt. The potential of the quinhydrone electrode in a solution of hydrogen ions of unit activity was taken as 0.6990 volt at 25 C. The solutions were maintained at 25 C. during each measurement.

TABLE 1.—*p_H Value of Saturated Calcium Carbonate Solution at 25 C*

Sample	Average Voltage	p_H Value
1	0.8580	8.81
2	0.8480	8.64
3	0.8610	8.86
4	0.8600	8.85
5	0.8540	8.75

The p_H value of the calcium carbonate solution was determined by means of the hydrogen electrode, a tenth-normal potassium chloride-calomel electrode being used as reference. The results obtained are summarized in table 1.

The p_H value of the calcium bicarbonate solution could not be determined with the hydrogen electrode because the passage of hydrogen through the solution

1. Loevenhart, A. S., and Crandall, L. A.: Calcium Carbonate in Treatment of Gastric Hyperacidity Syndrome, J. A. M. A. **88**: 1557 (May 14) 1927.

removed carbon dioxide from it. It was necessary to resort to the quinhydrone electrode. This electrode was used with a normal potassium chloride-calomel electrode as reference. The results of the measurements are given in tables 2 and 3.

TABLE 2.—*p_H Value of Calcium Bicarbonate Solution (Carbon Dioxide Passing Through Solution)*

Sample	Average Voltage	p_H Value
1	0.0635	5.97
2	0.0625	5.99

TABLE 3.—*p_H Value of Calcium Bicarbonate Solution (Without Excess Carbon Dioxide)*

Sample	Average Voltage	p_H Value*
1	0.0495	6.20
2	0.0509	6.18

*As carbon dioxide was removed, by shaking, by passage of inert gas through solution, etc., the p_H value of the solution increased at once.

SUMMARY

The clinical significance of these results is apparent. The p_H value of a saturated solution of calcium carbonate is 8.8. In the presence of carbon dioxide, in quantity sufficient to saturate the suspension, it is 6.0. Therefore, calcium carbonate would seldom, if ever, produce actual alkalinity of the gastric juice.

EPITHELIOMA OF THE PENIS

REPORT OF FIVE CASES *

CHARLES H. DE T. SHIVERS, M.D.
Associate Professor of Syphilology, Graduate School of Medicine, University of Pennsylvania; Chief Urologist, Atlantic City Hospital; Chief Urologist, Atlantic City Genito-Urinary Clinic
ATLANTIC CITY, N. J.

My purpose in this paper is to report five cases of penile cancer in which operations were performed by me in the Atlantic City Genito-Urinary Clinic during the last four and one-half years. It is not my object to present anything that has not already been given in previous articles on this subject but to call to the attention of the medical profession the fact that cancer of the penis is not an exceptionally rare disease but is sufficiently uncommon to be of interest, especially from a therapeutic and prognostic standpoint, and should be considered as a possibility in cases in which there are lesions on the penis that do not respond to the ordinary methods of treatment.

Age

0 to 10 years	0 cases
10 to 20 years	0 cases
20 to 30 years	20 per cent
30 to 40 years	0 cases
40 to 50 years	40 per cent
50 to 60 years	40 per cent

GENERAL OBSERVATIONS

Age.—The age at which the patients first presented themselves for examination ranged between 24 and 53 years, with decades divided as shown in the accompanying table.

Occupation and Race.—All these patients were married. Three were waiters, one was a tax assessor and the other a day laborer. Eighty per cent were negroes and twenty per cent were white. This increase in the colored race was probably a coincidence, as other writers have reported a higher percentage in the white race. No Jews were represented, and the United States was stated to be the birth place of all.

Duration.—At the time these patients first presented themselves for examination, the average duration of the cancer in three cases was seven and one-third months. In one case the disease had existed four months, and in the last case of the series only eight weeks.

Predisposing Cause.—As given by the physician in three cases, with a possible fourth, the predisposing cause was certainly phimosis. In the fourth case, a negro, aged 24, had been circumcised a month or so before the growth was first noticed, appearing as it did in the scar of circumcision. It is very probable that cancer existed prior to the operation and when the prepuce was removed some of the cancer cells remained in the living tissue. All these patients, with the exception of one, gave a previous history of phimosis or presented the condition at the time of examination. Some could retract the foreskin, others could not, and all but one paid little attention to cleanliness. One patient gave a history of papilloma on the glans penis which remained apparently benign for five years.

It certainly appears that phimosis bears a close relationship to carcinoma of the penis, for the literature reveals that it is extremely rare to encounter this lesion in the Jews or in any of the other races that practice circumcision.

Three of these patients had a positive blood Wassermann reaction and gave a clear clinical history of syphilis. What part syphilis or other lesions appearing from time to time on the glans penis and mucous surface of the prepuce and leaving behind them scar tissue play as a predisposing factor in producing cancer is still an open question.

The causes ascribed by the patients themselves vary. The one in whom cancer appeared in the scar of the circumcision attributed his condition to intercourse too soon after operation, which gave him considerable irritation; one patient said he was hit by a baseball on the shaft of the penis two years prior to the appearance of the cancer.

Symptoms.—All the patients complained of pain in the penis. This was probably due to the advanced stage of the disease and the associated cellulitis which so commonly accompanies these late cases. In one case in which the cellulitis was well advanced, the patient complained of some pain and swelling in both groins after a hard day's work. Another noticed a lump appearing on the dorsal surface of the shaft; this gradually became larger, softened and broke down. In one case, warts that had been on the glans penis for years broke down, forming an ulcer. In still another case a hard area could be felt, which was painful under a tight prepuce. This was accompanied by a foul discharge from the preputial sac.

In all these patients some change from the normal was noticed; each sought medical advice early from his family physician, but in only one instance was cancer recognized.

Adenopathy.—Most of the lymphatics of the penis drain into the inguinal nodes; first into the superficial group of inguinal nodes. This is the location of primary metastasis, which then extends to the deep inguinal

* Read before the Philadelphia Urological Society, April 26, 1926.

nodes and from there under Poupart's ligament to the iliac nodes within the pelvis. When the urethra is involved extension may occur along the lymphatics, passing over the symphysis directly to the deep pelvic glands. There is a difference of opinion as to the time metastasis occurs. This can probably be accounted for by the variation in the reports of various observers, for as shown in my cases and others lymphatic involvement may occur almost immediately or not for months.

Kaufmann [1] reported a series of forty-eight cases in which he concluded that metastasis had occurred in all but eight. Kuettner,[2] in a series of sixty cases, found metastasis in 32 per cent. Peters,[3] in a study of twenty-five cases which he observed for a period of thirteen years following operation, reported that three patients died from the operation, five died from causes other than cancer, three had recurrences one, two and eight years following operation, and fourteen were well after thirteen years. Of the last fourteen, he states that in about half the cases the lymphatic glands were not removed. He concludes that glandular involvement was not common.

Barringer,[4] in a series of thirty-six cases, states that in twelve the inguinal nodes were thought infectious, and in eleven carcinomatous; no enlargement was noted in two; the condition was questionable in three, and no record was obtained in three. He concludes that inguinal involvement by carcinoma is relatively late, and occurs in rather less than 40 per cent of the cases.

In 60 per cent of my cases there was no metastasis to the inguinal lymphatics at the time of operation, as shown by the pathologist's report. However, one patient in this group, with a lesion of only eight weeks' duration, developed cancer in a right superficial inguinal node two months after operation, although a most thorough dissection of all the fat containing the lymphatics over both the inguinal and the suprapubic regions had been carried out. This case helps to show that metastasis to the superficial inguinal lymphatics may occur very early in the disease, and that, no matter how careful the surgeon may be in the dissection of the adjacent glands, dissection may be incomplete. The remaining 40 per cent of this series have been free of metastasis to date.

Pathologic Examination.—The pathologist's report on the sections of tissue taken from these cases was squamous cell carcinoma, but for clinical purposes carcinoma of the penis is classified into two types; the papillary, or cauliflower, and the indurated ulcer. In this series 80 per cent presented the latter type, and 20 per cent the former.

The most frequent site of origin was the glans penis; the next, the under surface of the prepuce. The papillary type begins as a wart, which multiplies, spreading over a larger surface, and part of the tumor breaks down, forming areas of ulceration. This type may remain localized for some time; but when the tunic of the glans is once pierced and the loose cavernous tissue becomes involved, the progress of the growth is much more rapid.

The indurative ulcer type first appears as a pink pimple which undergoes ulceration, the area of ulceration increasing with extension of the infiltration, and like the papillary type finally penetrates the tunic of the glans. The latter type is more malignant and its extension more rapid. The two clinical types exist in the same lesion, but the growth is classified according to the one which predominates.

Treatment.—None of the patients in this series were seen early enough to permit the use of such measures as radium, roentgen-ray, fulguration or circumcision to effect a cure. In all, the tunic had been penetrated with infiltration of the loose cavernous tissue.

In two cases a partial amputation sufficed, but in the remaining three, owing to the advanced stage of the disease, it was necessary to perform a total extirpation. The operation was suggested by Horwitz.[5] In the three cases in which total excision of the penis was carried out, the urethra was transplanted in one to the anterior portion of the scrotum and in another to the posterior portion close to the perineum. The third patient at the time of operation had a large sinus leading to the membranous urethra, which remained from a previous operation for stricture. Regardless of where the urethra is transplanted, if there is secondary infection with contracture of the surrounding tissue following operation it may be necessary to dilate the orifice with sounds.

The subcutaneous fat and glands were dissected cleanly from the deep fascia. The spermatic cords were thoroughly cleaned. This dissection included the inguinal, suprapubic and femoral regions.

All our patients with the exception of two had a severe cellulitis at the time of operation, but, curious as it may seem, none of the inguinal glands were inflammatory. This infection made it necessary to be extremely careful in the postoperative treatment. The inguinal and scrotal regions were thoroughly drained and the dressings saturated with a solution of an organic mercury preparation, 1:5,000, and changed frequently. In this way operative mortality was prevented. A retention catheter was worn by all until the wound healed about the meatus.

Results.—Sixty per cent of the patients are living and well, without recurrences. In the first case, four years and six months has elapsed since the operation; in the second, two years, and in the third, one year and seven months. There were recurrences in 40 per cent. One patient is still living and showing some improvement following the application of radium to the carcinomatous area in the groin; the other patient died ten months after operation from metastasis to the spine.

REPORT OF CASES

CASE 1.—H., a colored man, aged 45, a laborer, was referred to me, July 22, 1922, because of inability to retract the prepuce, with considerable pain in the penis. The condition was first noticed four months before. The patient gave a previous history of a sore on the penis at the age of 28 years. He had never been treated for syphilis. The Wassermann reaction was four plus.

He was well nourished. The inguinal glands were not palpable. The glans penis was covered by a tight, swollen, unretractable prepuce with ulcerations around its margin, and a foul discharge coming from the preputial sac. Palpation over the skin disclosed a hard, indurated area on the dorsum of the glans. After the preputial sac had been washed out for several days, a dorsal slit was made which uncovered a large indurated ulcer of the glans. A section of tissue was sent to Dr. Kolmer with a subsequent report of squamous cell carcinoma.

A partial amputation was performed, Aug. 7, the incision being made 2.5 cm. posterior to the infiltration in the corpora cavernosa. The lymphatic glands were removed from both

1. Kaufmann: Verletzungen und Krankheiten Harnohre und Penis, 1886.
2. Kuettner: Beitr. z. klin. Chir. **26,** number 1, 1900.
3. Peters, W.: Prognosis in Cancer of the Penis, Ztschr. f. Urol. **15:** 410, 1921.
4. Barringer, B. S., and Dean, A. L.: J. Urol. **11:** 497 (May) 1924.
5. Horwitz, in Guiteras: Urology, New York, D. Appleton and Company, **2,** p. 532.

the inguinal and the suprapubic regions. The glands removed did not show a malignant change. Postoperative roentgen-ray treatment was not given. The interval since operation has been four years and six months. There has not been recurrence.

CASE 2.—C., a colored man, aged 24, employed as a waiter, first reported to the clinic, Jan. 2, 1925, complaining chiefly of pain in the penis. He had noticed some change from the normal eight months before. Two months following circumcision, a growth was noticed in the scar. The patient at once consulted his family physician, who made a diagnosis of syphilis and gave him antisyphilitic treatment for several months without improvement. The blood Wassermann reaction had always been negative.

The patient was fairly well nourished. The inguinal glands on both sides were palpable and hard. On the penis almost circling the corona and sulcus was a papillary type of growth with marked infiltration of both cavernous bodies for a considerable distance toward the root of the penis. This patient had no difficulty in voiding and the associated cellulitis was very mild.

A partial amputation was done, January 20. The inguinal glands removed at the operation showed the presence of carcinoma. This patient was given intensive postoperative roentgen-ray treatment. Death occurred ten months after operation from metastasis to the spine.

CASE 3.—E., a colored man, aged 53, employed as a waiter, first reported to the clinic, Nov. 26, 1924, with the glans penis practically destroyed. The duration of the lesion had been six months. He had had warts on the glans penis for five years. A diagnosis of squamous cell carcinoma was made, but the patient refused operation. However, he returned again at the end of three months and begged for relief. At this time his chief complaint was very severe pain in the remaining portion of the shaft. The blood Wassermann reaction was negative.

The patient was fairly well nourished. The inguinal glands were not palpable. The shaft of the penis, with the exception of one-half inch protruding from the scrotum, had been destroyed. There was a marked degree of cellulitis extending down and involving part of the scrotal tissue. The cavernous bodies showed infiltration well into the scrotal portion.

A total extirpation was done, February 27. It was not necessary to transplant the urethra, as the patient had a large perineal sinus which followed a previous external urethrotomy for stricture. The urethra was ligated and cauterized at the anterior layer of the triangular ligament. The adjacent lymphatic glands removed at the operation did not show malignant change. Following operation there was considerable secondary infection in the right inguinal and scrotal regions, which cleared up after two weeks. The patient received intensive postoperative roentgen-ray treatment. The interval since the operation has been two years. There is no evidence of recurrence. The patient is in excellent health and weighs more than 200 pounds (91 Kg.).

CASE 4.—W., a colored man, aged 41, a laborer, first reported to the clinic, June 28, 1925, his chief complaint being intense pain and swelling in the penis for the past five months. His blood Wassermann reaction was strongly positive.

He was poorly nourished. The inguinal glands on both sides were palpable and firm but not tender. The shaft of the penis was markedly swollen and edematous and very tender. A long, tight prepuce covered the glans penis, which could not be retracted, and coming from the under surface was a foul discharge. The cavernous bodies were infiltrated well into the scrotal portion of the penis. The report from Dr. Kolmer was squamous cell carcinoma.

While the pathologist's report was being waited for, multiple incisions were made in the skin of the shaft, with the escape of a large amount of creamy pus. Smears showed a gram-positive bacillus and diplococcus. Before operation, it was decided to try the effect of mercurochrome-220 soluble intravenously on this infection. So, on July 14, 17.4 cc. of a 1 per cent solution of mercurochrome-220 soluble, 2 mg. per kilogram of body weight, was given. Following this there was a marked chill followed by an abrupt rise in temperature, which lasted several hours. After this reaction the patient was greatly relieved, and had his first night's sleep in weeks. This treatment with mercurochrome was repeated again, July 17, with further improvement in the local infection, although following the second administration the patient developed symptoms of mercury poisoning. A total extirpation of the penis was done, July 24. The inguinal glands removed at the operation showed a malignant change. The urethra was transplanted in the anterior portion of the scrotum, but as the result of infection of the scrotal tissue following operation there was considerable secondary contracture of the tissues about the urethral orifice, which later necessitated dilation. The interval since the operation has been one year and seven months. To date, there has been no recurrence. This patient received intensive postoperative roentgen-ray treatment.

CASE 5.—S., a white man, aged 51, a tax assessor, was referred to me, Jan. 25, 1926, with a tentative diagnosis of cancer of the penis. His chief complaint was pain in the penis. The duration of the ulcer was eight weeks. Two years before, the patient had been hit on the dorsum of the penis with a baseball. This injury produced considerable pain and swelling, which lasted a week or more. He had always had an elongated, tight prepuce. The blood Wassermann reaction was strongly positive, and he gave no history of having been treated for syphilis. According to the patient's history, he first noticed a lump on the dorsum of the shaft just back of the corona; this gradually softened in the center, resulting in an ulcerated area. At first it was a question whether the condition was gumma or cancer, but Dr. Kolmer's report on the section of tissue examined by him was squamous cell carcinoma. The patient at first refused operation, and it was several weeks before he finally consented.

The patient was well nourished. The inguinal glands were not palpable. The penis presented a large indurated ulcer on the dorsum of the shaft, involving both the glans and the cavernous bodies, with infiltration extending well back toward the root. The prepuce, which entirely covered the glans, was tight and edematous.

A total extirpation of the penis was done, February 26. A thorough dissection of the lymph glands was made over the inguinal, suprapubic and femoral regions. The urethra was transplanted in the posterior portion of the scrotum close to the perineum. The pathologist's report on the glands removed at operation was negative for cancer. The patient refused immediate postoperative roentgen-ray treatment, as he was called out of town. Two months following operation, he reported to my office with a swelling in the right inguinal region which was superficial. Following this examination, when immediate roentgen-ray treatment was advised, he left town for several months again, and when he finally returned the affected gland had broken down with considerable area of ulceration in the right groin. A section of tissue taken showed the presence of carcinoma. Roentgen-ray treatment given at this time was without apparent result. The patient was then referred to Dr. Pfahler of Philadelphia, who is giving him large doses of radium. The result, of course, is very doubtful.

SUMMARY

1. All the patients in this series were seen too late to permit the use of such measures as radium, roentgen ray or fulguration to effect a cure.

2. In all the tunic of the glans had been penetrated, and it was necessary to do a partial amputation in two and a total extirpation in three.

3. The superficial inguinal glands were the seat of primary metastasis in all the cases showing glandular involvement.

4. In carcinoma of the penis, metastasis to the inguinal glands may occur very early, as shown by case 5 (about eight weeks), or quite late, as shown by case 3 in which there was no involvement at all in nine months, but during which time there was marked destruction of the penis.

5. The irritation of the glans penis and mucous surface of the prepuce resulting from the collection of

smegma under a tight foreskin is certainly the most important predisposing factor in the production of cancer of the penis.

6. There was no operative mortality. In 60 per cent of the cases there has been no recurrence. The interval since operation in case 1 was four years and six months, in case 3 two years, and case 4 one year and seven months. There were recurrences in 40 per cent; one of the patients died ten months after operation from metastasis to the spine.

7. The subcutaneous fat and glands were dissected cleanly from the deep fascia in all the cases. The dissection included the inguinal, suprapubic and femoral regions. Immediate postoperative roentgen-ray treatment was given in cases 3 and 4. No roentgen-ray treatment was given in case 1, and very late postoperative treatment was given in case 5.

121 South Illinois Avenue.

HYPOPITUITARISM

A SUMMARY OF OBSERVATIONS IN TWENTY-SEVEN CASES FOLLOWED SEVEN YEARS *

JOSEPH EIDELSBERG, M.D.
NEW YORK

Since 1919 there have been under our observation twenty-seven cases of hypopituitarism. The patients have reported consistently, so that their condition and progress have been most carefully followed. At the outset we laid down the following requisites before a case was included in this group:

1. Stunting of growth.
2. Decrease in sexual characteristics; e. g., infantile penis, infantile uterus, lack of characteristic hair lines and distribution, amenorrhea, and absence of sex instincts.
3. Increased sugar tolerance, varying from a slight deviation from the normal to a plateau curve, and clinically occasionally expressed as a desire for "sweets."
4. Obesity—variable, but most typically of the girdle type.
5. Decrease in basal metabolic rate, though this was not considered essential.
6. Other manifestations, as tapering fingers, low blood pressure, drowsiness, diabetes insipidus syndrome, headaches, and roenten-ray changes in the sella turcica.

Needless to say, few patients presented the entire deficiency syndrome, with all the classic signs, but no case was included which did not present sufficient evidence to classify it here.

When the diagnosis was made organotherapy was instituted, and the dose of the whole gland was from 15 to 75 grains (1 to 5 Gm.) daily. As previously pointed out, we have been able to study these twenty-seven cases for a period of about seven years, and some pertinent factors have been brought to light.

HEIGHT

Fourteen of the twenty-seven patients were distinctly below the average normal height for their age and sex, the greatest difference being 23 inches and the smallest 1 inch. Those less than 1 inch below or above the average were considered normal, and three were above the average, from 2 to 4 inches. The average decrease below the normal was 11 inches. Today of these fourteen patients seven have changed in height, while seven have remained practically the same, a change of less than 1 inch. Of the seven who changed in height, no one had changed in height during the four years prior to beginning treatment. The greatest change in height was in patients between the ages of 16 and 20, while two patients aged 23 and 24 years increased 2 and 3 inches, respectively. The average growth was 4½ inches.

AMENORRHEA

Fifteen of the twenty-seven patients were females, and eight had never menstruated. At the end of seven years three had begun to menstruate regularly, while two others had spotted off and on. Of the seven other females, four gave a history of irregularity and scantiness, and two of these are practically normal at the present date.

HAIR

Twelve were male patients, and six of these showed no hair over the pubes, in the axillae or on the face. Today eight of these males are normal as far as hair characteristics are concerned. Few of the females showed departures from the normal, and the slight discrepancies disappeared during the period of treatment.

OBESITY

The greatest improvements and our greatest disappointments occurred with regard to obesity. Eighteen patients were distinctly obese, their weights varying from 160 to 347 pounds. The most obese, a female, lost 45 pounds, while of the others, one lost 65 pounds, the average loss being 32 pounds. Three gained weight, the greatest gain being 14 pounds.

HEADACHES

In twelve of the twenty-seven patients, headache was an important symptom. Eight of these were females. In five (three of these were females) we readily discovered a marked improvement, and in two a complete disappearance of the symptom; these were females, with the headaches cyclic, and at the menstrual period. In the others there were some improvements and relief.

BLOOD PRESSURE

Of the twenty-seven patients, eleven had blood pressures varying between 86 and 100 systolic. Today all blood pressures are above 100 systolic. In three cases we found a rise to 160, 166 and 170, but on cessation of medication they fell below 140.

CONCLUSIONS

In drawing conclusions, we must remember that twelve of these patients were between the ages of 16 and 23 years of age when they came under observation, the oldest 44 years, and that some natural changes dependent on advance in years might have occurred; but as so little, if any, change had occurred in the four years prior to the introduction of the organotherapy, we are forced to feel fairly certain that a good part of the improvement was due to the treatment.

First, the best results from all angles, growth, weight, etc., were obtained in the younger patients, those under 20 years of age.

Secondly, the best results were obtained with the larger doses, from 50 to 75 grains (3.25 to 5 Gm.) daily.

Thirdly, persistency and patience in the treatment is paramount.

235 West Seventy-Sixth Street.

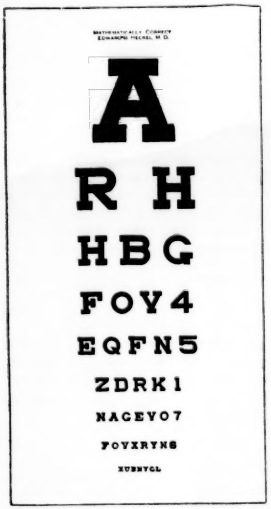
* From the Endocrine Clinic, Department of Medicine, New York Post-Graduate Medical School and Hospital.

Clinical Notes, Suggestions and New Instruments

CHARTS FOR TESTING EYES

EDWARD B. HECKEL, M.D., PITTSBURGH

The difficulty of obtaining on the open market accurate test charts, to record distant vision, prompted me many years ago to have these made by hand. In this manner only could one be sure that they would be mathematically correct.



One of the series of charts for testing eyes. The full size card measures about 11 by 21 inches.

They were also made in sufficient variety so as to eliminate memory in making the tests.

All of these letters, at their respective distances (200, 100, 70, 50, 40, 30, 20, 15 and 10 feet) subtend an angle of five minutes, while the component parts of the letters subtend an angle of one minute.

The B. K. Elliott Company now offers these in lithographed form.

The original letters were all made within squares divided into twenty-five squares, respectively, and the letters were drawn in such a way that the component parts of the letters include the small squares.

The sizes of the squares are as follows:

200	foot letter is	3.4906	inches square
100	foot letter is	1.7453	inches square
70	foot letter is	1.2217	inches square
50	foot letter is	0.8726	inch square
40	foot letter is	0.6981	inch square
30	foot letter is	0.5236	inch square
20	foot letter is	0.3490	inch square
15	foot letter is	0.2618	inch square
10	foot letter is	0.1745	inch square

Jenkins Arcade.

A CASE OF VINCENT'S ANGINA

C. E. WARE, M.D., ATLANTA, GA.

L. P. M., a white man, aged 28, was referred to me, June 22, 1925, by a dentist, complaining with a sore throat for two or three days.

The patient had had the usual diseases of childhood. Tonsillectomy was done two years before. He had sore throat one year before, which was diagnosed diphtheria though a culture was negative; from 20,000 to 30,000 units of diphtheria antitoxin and some local applications to the throat were given. The condition cleared up in about a week. There was no history of syphilis.

The pharynx was inflamed and a small ulcer was seen on a piece of tonsil in the right lower fossa. There was some discomfort and swelling.

A clinical diagnosis of Vincent's angina was made and verified by laboratory observation of Vincent's bacillus and spirillum.

The patient was seen daily in the office and various applications and gargles were used, but in spite of treatment the ulcer increased in size. He failed to report at the office for two or three days, and when I saw him the ulcer had become much larger and there was marked glandular swelling on the right side of the neck and much difficulty in swallowing. The temperature was 102.

Neoarsphenamine, 0.9 Gm., was given intravenously and the patient was transferred to the hospital. On admittance, the temperature was 103, pulse 88, and respiration 24. There was a slight reaction following the neoarsphenamine.

A complete blood count did not show anything of importance. Urinalysis revealed a trace of albumin but no casts.

Treatment of the throat was continued, arsphenamine paste being used, with solution of chromic acid and 50 per cent vinegar as a gargle. There was no response to this treatment and the patient grew worse.

Dr. Lokey saw the patient on the third day in the hospital. We ordered a Wassermann test made and 0.9 Gm. of neoarsphenamine was given intravenously. The Wassermann report was four plus. Then patient was put on mixed treatment. The temperature ranged from 100 to 103, the patient gradually growing worse. For irrigation every hour, equal parts of alkaline aromatic solution, N. F., compound solution of sodium borate and water were used. There was a very fetid odor to the breath.

July 13, 18 cc. of 0.5 per cent gentian violet solution was given intravenously. Also a 1 per cent gentian violet solution was used to spray the throat. The patient began to expectorate a moderate amount of dark, bloody phlegm. The temperature went as low as 99; the patient became delirious and the pulse rate increased. The mixed treatment was omitted for a few days on account of the urine showing a large amount of albumin, with hyaline and granular casts.

July 15, 15 cc. of 0.5 per cent gentian violet solution was given. One hour later the patient had a severe hemorrhage from the throat, bleeding at least a liter. Morphine and atropine were ordered and the throat was packed with a retention sponge.

When I saw the patient he was very weak; the pulse was 132. For fear of another hemorrhage, an external carotid ligation under local anesthesia was done by Dr. Turner. The patient stood the operation well. On examination of the throat following the hemorrhage there was a great deal of destruction of tissue. I could easily place a good sized Yates apple in the cavity on the right side of the throat, and the velum of the palate was destroyed on the right side as far as the uvula. After the hemorrhage, all odor disappeared. Fluids by mouth were pushed and proctoclysis was given. At midnight the temperature was 98.3, pulse 120, respiration 24. The next day the temperature was from 101 to 103 by axilla. Delirium continued and the patient was very restless.

Three days after the hemorrhage the patient had a sinking spell and it was necessary to stimulate with strychnine and whisky. July 17, 0.9 Gm. of neoarsphenamine was given and mixed treatment started again. There was no reaction. Two days later the temperature went to normal and remained so. The mental symptoms cleared up, improvement continued daily, and the patient was able to leave the hospital, August 1.

A Wassermann test was made one week later with a report of one plus. Mixed treatment was continued. The only discomfort the patient had was a regurgitation of fluid through the nose when swallowing, and spasm of the muscles of the jaws, being unable at times to open the mouth. When seen one and one-half months later, he had gained much weight and was not annoyed, when swallowing, by fluids coming through the nose. Examination of the throat revealed a band of adhesion from the soft palate on the right side to the posterior pharyngeal wall.

The patient was last seen, Christmas, 1925, and was in good health and stated that he had one attack of sore throat during the fall, but only for a few days.

My reasons for reporting this case are the virulence of the infection and the slight response to treatment; also the profuse hemorrhage, external carotid ligation and recovery.

It is my opinion that the patient had Vincent's angina one year before the present illness, but the condition was not diagnosed. There is a question whether, if this was a mixed infection, two months' treatment would have given a negative Wassermann reaction.

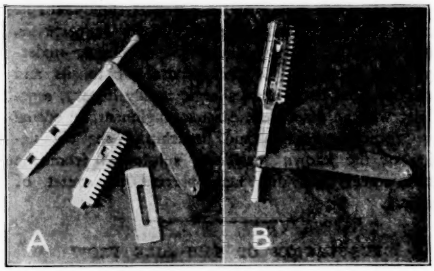
A NEW THIERSCH GRAFT RAZOR

A. G. BETTMAN, M.D., PORTLAND, ORE.

Plastic surgery is exacting in all its requirements; always so as to technic, often so as to instruments. Skin grafting is exacting in both regards.

The greatest difficulty one has in cutting Thiersch grafts is in procuring a satisfactory cutting instrument. I have devised a knife that is simple and inexpensive and that serves the purpose well, giving a sharp edge at all times. It can be made in a few minutes, if necessary, from materials procurable anywhere.

From the guard of a Durham Duplex safety razor, I removed the teeth from the left side at the line where the teeth join the body of the guard. This straight edge was then beveled, and



A, the three parts of the Durham Duplex razor showing the guard (center) after having the left teeth removed and the two edges beveled. *B*, the new Thiersch knife, complete and ready for use.

the outer end was also beveled to facilitate the removal of the grafts from the knife. This completes the instrument. A guard which has a wider surface than the one ordinarily supplied may be provided.

With this razor as described, a new, unused, sharp blade is always at hand. When one cutting edge loses its keenness the opposite edge may be used, and new blades are used as necessary. The back cutting edge is not injured while not in use. Only a moment is required to change blades. There is no honing to be done. The blades are sharp, are inexpensive, and being 2¼ inches wide, cut a width of skin suitable for any purpose.

724 Medical Arts Building.

Special Article

ETHYLENE—II

REPORT BY AMERICAN MEDICAL ASSOCIATION CHEMICAL LABORATORY

Recently the A. M. A. Chemical Laboratory reported on the examination of several specimens of Ethylene for Anesthesia, which had been submitted to the Council on Pharmacy and Chemistry. The results of the examinations, together with the recommendation for the limit of carbon monoxide, were published in THE JOURNAL.[1] Since that time another brand ("Ethylene for Anesthesia," Certified Laboratory Products Company) has been submitted to the Council on Pharmacy and Chemistry. The contents of a tank of the latter product, obtained on the open market and another one obtained from the firm, were subjected to chemical examination.[2] In addition, the laboratory received a specimen (sent in by the Wayne Pharmacal Company) of Ethylene manufactured by the Kansas City Oxygen Gas Company, which, it was stated, had been opened at a hospital at Fort Wayne, Ind., and that the physicians had noticed a blue gas being emitted when the product was used. The physicians called the observation to the attention of the Wayne Pharmacal Company; the firm, in turn, referred the matter to the A. M. A. chemists. In view of the seriousness of possible contamination of ethylene for anesthesia, the laboratory felt it to be its duty to the profession at large to investigate the suspected product. The results of the examination of both Ethylene for Anesthesia C. L. P. and the suspected specimen of the Kansas City Oxygen Gas Company are given in the accompanying table.

Determinations of "Ethylene for Anesthesia"

Brand	Where Obtained	Methyl	Barium Hydroxide	Ammonium Silver Nitrate	Per Cent Ethylene	Per Cent Oxygen	Per Cent Carbon Monoxide	Pyrotannic Acid Test †
Certified Laboratory Products Co.	Manufacturer	Neg.	Neg.	Neg.	98.87	0.23	0.005*	Neg.
Certified Laboratory Products Co.	Open market	Neg.	Neg.	Neg.	98.99	0.17	0.00	Neg.
Kansas City Oxygen Gas Company ‡	Wayne Pharmacal Company	Neg.	Neg.	Neg.	98.85	0.24	0.00	Neg.

* This is less than the experimental error of the method.
† The negative reports on the pyrotannic acid tests are to be interpreted as less than 0.01 per cent carbon monoxide.
‡ This specimen had been opened previous to our examination at St. Joseph's Hospital, Fort Wayne, Ind.

All these specimens were found to meet the requirements of New and Nonofficial Remedies.

CONCLUSIONS

1. Specimens of Baxter's Ethylene for Anesthesia,[3] in addition to the brands now described in New and Nonofficial Remedies (namely, those of the Ohio Chemical and Manufacturing Company and the Kansas City Oxygen Gas Company, previously reported on by this laboratory), have been examined. All the specimens examined have been found to be satisfactory and to conform to the standards accepted for inclusion in New and Nonofficial Remedies.

2. A specimen of suspected Ethylene for Anesthesia (Kansas City Oxygen Gas Company) was also examined, and was found to be of satisfactory purity. No so-called blue gas was noticed.

3. The laboratory again repeats its previous recommendations, that physicians use only the brands of Ethylene described in New and Nonofficial Remedies. Furthermore, that manufacturers test their products according to the standards in New and Nonofficial Remedies (including the hemoglobin test which has been incorporated in the standards), and that such statement of examination accompany each tank of ethylene.

1. Chemical Examination of Ethylene for Anesthesia, Report by A. M. A. Chemical Laboratory, J. A. M. A. **88:** 322 (Jan. 29) 1927.
2. As in the previous work, the Laboratory obtained the collaboration of W. R. Smith, head of the Department of Chemistry, Lewis Institute.
3. Announcement of acceptance of Ethylene Certified Laboratory Products, Glendale, Calif., was published in THE JOURNAL, June 18, p. 1967.

Related Physical Education.—All physical education courses should be related to the organic health, the neuromuscular education and the emotional and recreative life of the individual.—Physical Education Preparation of the Classroom Teacher, Editorial, *American Physical Education Review*, November, 1919, p. 450.

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SATURDAY, AUGUST 6, 1927

ASTHMA AND ALLERGY

The association of asthma with allergy or the undue sensitization of the body to certain substances inspired the hope that marked improvement in the management of the distressing disorder would result from the newer knowledge of allergic phenomena. Some of the early successes were so striking that they fanned the current interest of medical circles into intense enthusiasm. Then came the occasional disappointments and apparent contradictions so commonly encountered whenever some diagnostic or therapeutic novelty is heralded without adequate discussion and with unbounded hopes. The seasoned observer on the side lines has learned that this is not always an indication of failure in the procedures under consideration; it is more often due to insufficient realization of the limitations and modifying conditions attached to most biologic manifestations.

There is, accordingly, great timeliness in the comment of Peshkin [1] of Mount Sinai Hospital, New York, that extensive experience in treating allergic diseases forces the realization that protein sensitization alone does not entirely explain the varied manifestations associated with allergy. Undoubtedly many children with asthma who are skin sensitive to various proteins do not show any etiologic connection between protein sensitization and the malady.[2] Presumably this means that in those persons in whom protein sensitizations have been found to be of etiologic importance, the sensitizing substances were only exciting factors and not the fundamental causes of symptoms. Various students of the subject have formulated the general view that the basis of allergy under the conditions here discussed is a disturbed balance of some sort, probably manifesting itself through the nervous system. As Peshkin [1] prefers to express this, when the body is in a state of "physicochemical equilibrium"—a balanced allergic state—the allergic patient enjoys freedom from symptoms despite exposure to an etiologic protein. If any factor overthrows the governing mechanism, symptoms will appear.

In harmony with this conception is the observed association of a variety of diseases in children with the onset of asthma. Physical overexertion, indiscretions in diet, seasonal changes and other nonspecific factors may contribute to the disturbance of the protective mechanism that maintains the "physicochemical balance." If exposure to the sensitizing protein is insufficient to disturb this equilibrium, Peshkin insists that an intercurrent infection often suffices to produce complete unbalance. From a practical standpoint, he adds, if a child contracts such diseases as pertussis, measles, scarlet fever or acute pneumonia, or undergoes an operation for the removal of tonsils and adenoids, and there is an allergic family history, especially with an antecedent eczema, angioneurotic edema or "recurrent rhinitis and bronchitis," the elimination of the known sensitizing substances from the environment and diet may prevent the onset of asthma.

1. Peshkin, M. M.: Asthma in Children: III. Am. J. Dis. Child. **33**: 880 (June) 1927.
2. Peshkin, M. M.: Asthma in Children: I. Etiology, Am. J. Dis. Child. **31**: 763 (June) 1926.

REGULATION OF THE BILE FLOW

As in other domains of science, there are problems in physiology that are subjected to frequent shifts in their solution. The long continued debate of the myogenic versus the neurogenic origin of the heart beat affords a familiar example of conclusions changing with pendulum-like swing as each new item of evidence is discovered. A somewhat similar uncertainty seems to attend the explanation of the regulation of the flow of bile and the rôle of the gallbladder. Thus in contradiction to the earlier theory that the resistance to a continuous flow of bile into the intestine is afforded by the activity of a distinct sphincter at the mouth of the common bile duct has arisen the view that the stasis referred to is really due to the tonicity of the adjacent duodenum.

Closely related to the function just discussed is the problem of the filling and emptying of the gallbladder. Whether it is a sphincter action or duodenal tonus that prevents the onward progress of the bile, in any event the secretory pressure of the liver is thereby enabled to bring about distention of the gallbladder. Pressure is thus exerted on the contents. What is the determining factor in securing the emptying of the gallbladder at intervals? Is it the elasticity of the organ or the active forceful contraction of its musculature when bile is needed in the intestine? Both agencies have been credited with the accomplishment. Contractile intervention implies an effective musculature with which the gallbladder is admittedly only poorly supplied at best.

As the result of investigations at the University of Chicago, Burget [1] champions the conclusion, contrary to what has been reported heretofore in THE JOURNAL,

1. Burget, G. E.: The Regulation of the Flow of Bile: III. The Rôle of the Gallbladder, Am. J. Physiol. **81**: 422 (July) 1927.

that the gallbladder is incapable of contractions that may be construed as being of major importance in the flow of bile. Thus Burget joins those who believe that the organ has only a passive rôle in bile flow. Because of its elasticity, the gallbladder wall when under tension aids the flow of bile in a passive manner. The theory of the alleged reciprocal action between the gallbladder and the sphincter of Oddi is discounted.

It has lately been clearly established that a discharge of bile from the gallbladder is a characteristic response to a meal of fat. This has been ascribed by its earlier investigators to a forceful contraction of the bladder musculature. Burget, however, explains the phenomenon on the basis of a temporarily lowered tonus of the intestine on the introduction of fat. Under such conditions the resistance to outflow is sufficiently reduced to permit a movement of the bile under the accumulated pressure without special muscular intervention. In other words, this study tends to confirm the conclusion that the process of bile flow into the bowel is regulated by tonicity and peristalsis of the duodenum, with elasticity of the gallbladder and intra-abdominal pressure as auxiliary factors.

THE SURVIVAL OF THE FITTEST

In the struggle for existence that life represents, the survival of the fittest appeals to many thinkers as the outstanding ideal. They argue that it makes for strength and progress in the race if the unfit—the weaklings and the degenerates—are eliminated through their inability to meet the strenuous conditions of rigorous living. Consequently not a few persons challenge many features of the modern program for public health and preventive medicine as well as allied social schemes for human comfort on the ground that these tend to counteract and discount the advantages that selection through inherent fitness is alleged to represent. As a recent writer has expressed it, by protecting us from our enemies, the bacteria and the viruses; by removing the sources of disease; by showing us how to avoid unfavorable conditions and to find favorable ones; in short, by bringing us and our environment into harmony, the "civilizers" are promoting the survival of the unfit; they are progressively filling the human race with the weak and the degenerate, who must hand on their weakness and degeneracy to their descendants.

Such arguments cannot be lightly dismissed. The modern investigations in genetics have, indeed, shown that it is quite possible to produce a population composed of the congenitally defective—"the halt, the blind, the weak, the variously deformed and degenerate." The biologist of today refers these possibilities back to the transmission of defective "genes," the hereditary substance carriers that determine development. In a stimulating address before the National Tuberculosis Association at Indianapolis in May, Professor Jennings[1] of the Johns Hopkins University sustained the thesis that defects in genes become as open to remedy as defects in nutrition. After all, the underlying problem is largely one of chemistry. The genes are chemical compounds. The consequences of a defective thyroid secretion are remedied by introducing synthetically produced thyroxin with the food. In principle it is clear, says Jennings, that defects in the store of chemicals given us by heredity may be supplied by other means; that undesirable things in the store of genes may be cancelled or corrected; that reactions among them which take an undesirable turn may be altered, set right. All these things, he adds, are seen to be mere matters of technic: one needs but to know how.

Of course, the correction of defects attributable to hereditary weaknesses does not necessarily abolish the latter. However thoroughly the natural effects of his "poor constitution" may be offset and his own life made more satisfactory alike to himself and to society, the defective individual continues to be a potential producer of the unfit. Shall he therefore be prevented from surviving? Not infrequently physical shortcomings go hand in hand with conspicuous mental capacities. The artist is by no means always an athlete. Shall the progress of the race be safeguarded by preventing the application of scientific ingenuity whereby the hereditarily weak may secure the enjoyment of a full, useful, happy, long life? To such queries Jennings has offered a cogent reply. The mere survival of a genetically defective individual does nothing to increase the degeneracy of later generations—provided he does not propagate. Not survival alone, but also propagation, Jennings rightly adds, is required for the perpetuation of defective genes. Without propagation, survival is harmless, so far as race deterioration is concerned.

The implications of these statements are fairly obvious. In their relation to the modern activities in the field of public health and social betterment they place burdens of responsibility where they have been only lightly considered heretofore. The public health worker, Jennings remarks, must become genetically minded, eugenically minded. If by his activities he promotes, in the congenitally defective, propagation as well as survival, his work does indeed tend toward a measure of racial degeneration. The control of the instincts that lead to propagation is a formidable problem. The subject is one that cannot be thrust aside merely because it calls for considerable delicacy in presentation and, as yet, undevised tact in its furtherance. In any event the control of our environments will not be summarily abandoned. We still know too little about the details of heredity to assume that protective and defensive actions or selective control of the environment are inevitably threatening to human

1. Jennings, H. S.: Public Health Progress and Race Progress. Are They Incompatible? Science **66**: 45 (July 15) 1927.

welfare in the long run. We may properly watch for defective genes and stop the propagation of their bearers; but, as Jennings concludes, the proposal to abandon control of the environment—the cessation of the process of adjusting ourselves to the conditions—is not a serious contribution to the practice of life.

SOME EFFECTS OF MODERATE PHYSICAL TRAINING

The proper place of exercise and physical training in the promotion of human well being cannot be precisely evaluated until the fundamental facts in relation to such muscular functions are ascertained and correctly interpreted. Clinical medicine has a special interest in this theme because it frequently makes use of various schemes of exercise as parts of its physical therapy. Rational prescription of any form of exercise presupposes an adequate knowledge of how it will affect the bodily functions and the important organs. Unfortunately, little more than the beginnings have been made in the investigation of the problems here involved. The work of the muscles proceeds at the expense of a metabolism of matter. Training seems to be a factor in determining the energy required for the performance of a given task. Thus a person unaccustomed to a certain type of muscular exertion, such as mountain climbing, is said to use proportionately more energy than one who has been trained for such work.

It is well established that the pulse rate is, broadly speaking, an index of the metabolism. Consequently the rate of the heart beat should give an indication of changes in the basal metabolism so far as this is affected by either training or the disuse of the muscles. A physically trained man is supposed to perform a given amount of work with a smaller consumption of oxygen than the untrained and to make a smaller demand on his heart, with the result that it beats less frequently.

Most comparisons of this sort have been made between trained and untrained persons of about the same size. In the studies of Schneider [1] and his associates at Wesleyan University in Connecticut the effects of physical training have been observed during pretraining, training and posttraining periods in the same persons. They do not lend support to the idea that the taking of daily exercise according to some regular prescription will increase the basal exchange of the body. If anything, the basal gaseous exchange may be slightly reduced during a period of training. This seems to happen despite any possible growth in the size, and hence the oxygen requirements, of the muscles. Training slightly retarded the pulse rate of the basal condition in most persons examined. One may therefore assume that the basic processes of the body become more efficient during a period of physical training. There was no constant effect on the arterial blood pressure. The conclusions here summarized refer to rational forms of vigorous physical exercise rather than to excessive athletic undertakings of the most strenuous sort. The latter deserve far more intensive investigation than has yet been accorded to them. After all, the limits of physiologically profitable activity, rather than competitive overdoing, are problems for the scientists quite as well as for the professional athletic trainers.

1. Schneider, E. C.; Clarke, R. W., and Ring, G. C.: The Influence of Physical Training on the Basal Respiratory Exchange, Pulse Rate and Arterial Blood Pressure, Am. J. Physiol. **81**: 255 (July) 1927.

Current Comment

THE ACCURACY OF ERYTHROCYTE COUNTS

Among the errors frequently committed in the use of so-called scientific data is the failure to take into account the limitations of the technic employed and the variations that may be normally inherent in the processes under observation. In the estimation of body temperature, for example, the physician has become aware of diurnal variations, amounting to as much as one degree Fahrenheit at times, that need not be attributed to incipient febrile processes. Vigorous exercise likewise brings about a small though unmistakable rise in temperature that is promptly dispelled again during health. The interpretation of the data on basal metabolism calls for an appreciation of the ranges within which deviations from the "average normal" may occur without exciting suspicion of any pathologic upset in the metabolic processes of the body. Thus, no one would indict a figure within 10 per cent of the arithmetical average for a given age, size and sex. In deciding what shall be regarded as the proper body weight and stature of a person, the shortcomings of fixed figures for specific conditions have of late become accentuated through the growing recognition that physique varies with racial and other hereditary characters. Among the frequently made measurements in medicine are the estimations of the number of red blood cells per cubic millimeter of the circulating medium. The reports of such observations sometimes indicate an utterly unwarranted devotion to numerical expressions. Aside from the fact that the methods of counting in current use do not permit an accuracy within the tens of thousands limit, there are also diurnal variations, apparently, that must be taken into consideration. This Leake, Kohl and Stebbins [1] of the University of Wisconsin have found in observations at hourly intervals on a number of healthy men and women from 18 to 30 years of age. The maximum diurnal variation in the specific gravity of the blood was 0.0033 for the men and 0.0027 for the women, with general averages of 1.0565 and 1.0533, respectively, for them. In the same persons the average maximum diurnal variation in the red blood cell count was 345,000 for the men and 310,000 for the women. These effects were not due to any strenuous or abnormal tasks on the days of observation. There was no

1. Leake, C. D.; Kohl, M., and Stebbins, G.: Diurnal Variations in the Blood Specific Gravity and Erythrocyte Count in Healthy Human Adults, Am. J. Physiol. **81**: 493 (July) 1927.

direct correlation between the changes in specific gravity and the erythrocyte count of the blood, except a slight simultaneous fall after meals, probably due to blood dilution. Such information should make a clinician somewhat indifferent to variations in erythrocyte counts when not more than a quarter of a million cells per cubic millimeter of blood are involved.

MEDICAL NEWS IN THE SCOTSMAN

Dr. George H. Simmons, attending the meeting of the British Medical Association as a representative of the American Medical Association, sends THE JOURNAL a copy of *The Scotsman*. The front page of this newspaper is classified advertisements: situations wanted, specific articles for sale, mattresses, tea, linoleum, summer underwear and Scotch whisky; on page two are reviews of books; pages three, four and five, markets; page six, the courts; page eight, a summary of the news and editorials; page ten, educational, church and news of the services; page eleven, parliament; page twelve, partly pictures of current events; the next page, sports; the last page, advertisements. There are no large headlines and no featuring of crime, sports or divorce. Several columns are devoted to the meeting of the British Medical Association, which opened in Edinburgh, July 20. Scientific papers are abstracted in a manner that should please the author and the reader. There is much about the centenary of the birth of Lord Lister in M'Ewan Hall of the University of Edinburgh. Physicians from many parts of the world were there. The chancellor of the university presided; short speeches were made by Professor Tuffier of Paris, Prof. Harvey Cushing of Boston, Prof. John Stewart of Halifax, and Sir William Watson Cheyne. In conclusion, the chancellor announced that the Royal College of Medicine, Royal College of Surgery and the university had conceived a scheme of erecting an institute in honor of the memory of Lister which would include a pathologic laboratory and other departments of medicine. *The Scotsman* reports a special graduation ceremony. There is a brief biography after the name of each of the men on whom the degree of doctor of laws was conferred, including Vittorio Ascoli, M.D., professor of clinical medicine, University of Rome; Harvey Cushing, M.D., professor of surgery, Harvard University; Charles L. Dana, M.D., professor of nervous diseases in the University of Cornell; Lord Dawson of Penn, G.C.V.O., K.C.B., physician in ordinary to the king; Archibald Donald, M.D., emeritus professor of clinical obstetrics and gynecology, University of Manchester; Charles Edward Douglas, M.D., Cupar-Fife; Knud Faber, M.D., professor of medicine, University of Copenhagen; Sir William Hale-White, M.D., F.R.C.P.; Jan Van Der Hoeve, M.D., professor of ophthalmology, University of Leyden; Robert George Hogarth, F.R.C.S.E., Nottingham, ex-president, British Medical Association; Col. William Hunter, M.D., consulting physician to the Eastern Command and to Charing Cross Hospital, London; Otto Meyerhof, Kaiser-Wilhelm Institute of Biology, Berlin; Thomas Hugh Milroy, M.D., professor of physiology, Queen's University, Belfast; Sir Berkeley George Andrew Moynihan, president, Royal College of Surgeons of England; Sir John Herbert Parsons, ophthalmic surgeon, University College Hospital, London; Sir Humphry Davy Rolleston, M.D., regius professor of physic, University of Cambridge; George Frederic Still, M.D., professor of diseases of children, King's College, London; William Sydney Thayer, M.D., professor emeritus of medicine, Johns Hopkins University; Wilfred Trotter, F.R.C.S.; Theodore Martin Tuffier, Academy of Medicine, Paris; Sir Almroth Edward Wright, M.D., professor of experimental pathology, University of London, and Otto Naegeli, professor of medicine, University of Zurich (in absentia). *The Scotsman* is a remarkable newspaper; it must be peaceful in Edinburgh early in the morning.

HOSPITAL CHARITY IN MICHIGAN

An unusually efficient survey of the manner in which modern medical practice is attempting to meet the needs of the community is available in a preliminary report of a committee appointed by the Michigan State Medical Society to investigate the charity work of Michigan hospitals. The committee finds that the distribution of costs of hospital service is not equable since patients with more expensive accommodations are forced to pay the way to a considerable extent of those in the wards or cheaper rooms. "The relative proportion of wards and rooms is rarely adjusted," it is said, "to meet the pocketbook, and patients are frequently forced into rooms that are beyond their means." Moreover, patients are charged fixed rates and not according to their means, so that a wealthy patient, to save expense, may elect to go into a ward and thus deprive some more needy patient of the opportunity to secure reasonably priced accommodations. Among the costs assessed to patients are those associated with the maintenance of the nurses' training school, uncollected bills, outpatient departments, and charity work. The committee felt that all these charges actually belong on other shoulders. Because of the costs involved and the difficulty of meeting expenses, physicians are often asked to render free service to patients who should not actually have such service, the reason assigned being the cost of the hospital service. Here again the committee felt that physicians should not be obliged to render service without compensation in instances in which they did not feel that the patient was entitled to charitable service. The basic principle recognized was, however, that it is better to be overgenerous in the donation of services than to be harsh and uncompromising to those struggling for an existence and in distress. A special portion of the report dealt with the problems raised by the existence of the University of Michigan Hospital.

What Is Immunity?—Immunity to disease, the ability to resist infection, depends upon the presence in the blood stream and body cells of various immune substances or antibodies. The physiological chemistry of these substances is very complex. It is not known just how far hygienic living and vigorous health serve to increase the formation and powers of these antibodies, but there is a close relationship.—Report, Joint Health Committee, Health Education, p. 26.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Personal.—Dr. Michael S. Creamer, Los Angeles, has been appointed assistant state medical director of the California Industrial Accident Commission to succeed the late Dr. Henry E. Southworth.——Dr. Allen F. Gillihan has resigned as state district health officer of the California State Board of Health to become health officer of San Luis Obispo County; Dr. Gillihan has been connected with the state board for ten years. ——Dr. Henry M. Beck has been appointed city health officer of San Rafael to succeed Dr. William F. Jones.——Dr. Emil W. Meyer has been appointed health officer of San Bernardino County to succeed Dr. Emmett L. Tisinger.—— Dr. George S. Martin, Susanville, has been appointed health officer of Lassen County to succeed Dr. Hiram B. Ehle.

Committee Requests Consultation on Pyorrhea Research.—For two years, about fifty members of the faculty of the University of California and assistants have been investigating the cause of pyorrhea. The Carnegie Corporation and various dental societies furnished about $100,000 to carry on this work. Some of the experiments seem to show that in animals and man a condition approximating pyorrhea can be induced by "slight upsets in the acid-base balance of their diet." On account of this seeming "tangential direction" which the research took, the stomatologic research committee of the university requested the Carnegie Corporation to send the following men to California for consultation on this problem: Lafayette P. Mendel, Ph.D., Sterling professor of physiologic chemistry, Yale University; Elmer V. McCollum, Ph.D., professor of biochemistry, Johns Hopkins University School of Hygiene and Public Health, and Dr. Edward H. Hatton, professor of pathology and special research investigator, Northwestern University Medical School, Chicago. Dr. Mendel first made the trip, and Dr. McCollum went late in July. Dr. Hatton was expected to arrive early in August. Heretofore, research into the cause of pyorrhea has been largely through the approach of bacteriology rather than of nutrition.

GEORGIA

Society News.—Dr. J. E. New, Dexter, was elected president of the Twelfth District Medical Society, July 7, at the midsummer meeting in Dublin; among the speakers on the scientific program were Dr. Elmore C. Thrash, Atlanta, and Dr. Thomas E. Rogers, Macon; at the banquet, Dr. Jarrett W. Palmer, Ailey, was toastmaster, and, among others, the president of the Medical Association of Georgia, Dr. William A. Mulherin, responded. There were sixty-four present at the banquet.—— Dr. Herbert S. Alden addressed the Fulton County Medical Society, Atlanta, July 21, on "Sickle Cell Anemia."

Extension Teaching by Medical School.—During the last school session, the University of Georgia Medical Department held clinics in seven cities and towns of the state, under the auspices of the county medical societies who furnished the clinical material; there was an orthopedic clinic at Athens, and medical, pediatric and orthopedic clinics at Waycross, Cuthbert, Columbus, Rome, Cordele and Arlington. This is the second consecutive year that the medical school has been engaged in this work. The expenses of the faculty members who gave the clinics were paid by the general fund of the medical department.

ILLINOIS

Rabies Increasing Down State; Decreasing in Chicago.—The state department of public health reports a great increase in the prevalence of rabies since 1911 as indicated by laboratory data. There were three positive cases reported in 1911; none from 1912 to 1918; thirty-nine in 1924; sixty in 1925, and 140 in 1926. The foregoing were reported from the laboratory in Springfield. From the laboratory at Urbana, one positive specimen was reported in 1921; twenty-five in 1924, and sixty-nine in 1926. In the first five months of 1927, fifty-six positive specimens were reported from the Springfield laboratory. While there appears to be an increase down state, there has been a decrease in the amount of rabies in Chicago, where, in 1911, there were 119 positive examinations without any marked decrease until 1916, when there were forty; in 1920 there were thirty, and in 1926, seventeen.

Chicago

Accidental Deaths in July.—The records in the office of the coroner of Cook County are said to show an unusual number of accidental deaths for the month of July. The automobile was responsible for eighty-four; drowning, sixty-two; heat, thirty-eight; airplane, five; storms, four, and fireworks, four, a total of 197.

Society News.—The meeting place of the Jackson Park Branch of the Chicago Medical Society will be at the new Albert Merritt Billings Hospital of the University of Chicago at Ellis Avenue on the Midway.——Dr. Herman M. Adler will give an address during the annual meeting of the American Bar Association, Buffalo, August 30, on "Biologic and Pathologic Aspects of Behavior Disorders."

Camp for Heart Cases.—Under the auspices of the Chicago Heart Association, a group of about 350 cardiac patients taken from various Cook County clinics, left, July 18, for a summer vacation at Camp Reinberg, Palatine, Ill. The Cook County commissioners are said to have afforded the accommodations for the patients, and to have gradually increased the facilities annually since 1922 from ninety beds to 350.

Additions to Medical Faculty.—The board of trustees of the University of Chicago announces the following additional appointments to the faculty:

Dr. Rollin T. Woodyatt, chairman of the department of medicine.
Dr. Dudley B. Reed, director of the health service and professor in the department of hygiene and bacteriology.
Dr. Frederick Tice, clinical professor in the department of medicine, Rush Medical College.
Dr. Solomon Strouse, associate clinical professor in the department of medicine, Rush Medical College.

Requests for Medical Speakers.—The lay educational committee of the Illinois State Medical Society is receiving requests from women's clubs for physicians to appear on their programs during the coming season. The county superintendents of schools are also asking the committee to furnish speakers for teachers' institutes. The discussion of such subjects as the "Periodic Health Examination," "Health Audits for Club Women" and "Team Work with the Community" is being requested. The committee received eighty-eight requests for speakers between January 1 and May 1 for the Kiwanis', Lions', Rotary and Optimist clubs, and the parent-teacher associations, the home bureaus and women's clubs.

Tuberculosis in Chicago.—Last year the mortality from all forms of tuberculosis in Chicago amounted to 83 per hundred thousand of population; for the year 1900, the rate was 173.9. Tuberculosis has dropped on the list of important causes of death in Chicago from first to fifth place. According to the June 28 bulletin of the health department, it appears that more males died from tuberculosis in Chicago than females, the respective rates last year having been 80.3 and 66.5. There has been no increase in the death rate from pulmonary tuberculosis in the white population of Chicago since 1922, although the rate for the city as a whole has increased somewhat since that year due to an increased death rate among the negro population, which is about two and one-half times as high as the rate for the white population. For children under 11 years of age, the negro death rates in 1924, 1925 and 1926 were from ten to twenty times as high as those for the white population in the same age group. During 1926, nearly 41 per cent of the deaths among children under 11 years of age were in negroes, although only 3 per cent of the children in Chicago are negroes. The enormous mortality from tuberculosis among negroes is the subject of a negro health survey which is now being made under the direction of Dr. Harrison L. Harris, Jr. Funds are being raised for a special study of negro health in Chicago by the city commissioners of health, with the support of several aldermen and others, and it is expected, the report states, that a concrete program for improving the health of negroes as a part of the general community health program will soon be forthcoming.

INDIANA

Society News.—Wabash and Grant county medical societies held a joint meeting at Somerset, July 21; Dr. Earl A. Rogers, Somerset, and Drs. John C. Knight, Jonesboro, and James L. Walker, Lafontaine, were the hosts. Among the guests of honor were Dr. George R. Daniels, Jr., Marion, president of the state medical association, and Dr. Frank E. Abbett, Indianapolis.

"Dr." Wright, Impostor, Adjudged Insane.—It is reported that "Dr." James F. Wright, who was arrested at Huntington in March, on a charge of practicing medicine without a license, was adjudged insane, July 2, and sent to the Indiana Hospital for the Insane at East Haven, Richmond. THE JOURNAL, April 16, noted that the Indiana State Board of Registration in Medicine had revoked the license of John F. Wright, Jan. 12, 1926, which license is said to have been issued to James F. Wright, who had obtained it by fraud and misrepresentation. Wright was convicted of the charge, May 10, and since then has been working out his fine on the state farm. He is said to have been committed to the state hospital for the insane nine years ago.

KENTUCKY

Society News.—Dr. William M. Elliott, Western State Hospital, Hopkinsville, entertained the Christian County Medical Society at the hospital, July 19. There were fifty-five persons present. Dr. Curran Pope, Louisville, spoke on "How We Think," and Dr. Perry Bromberg, Nashville, Tenn., on "Infections of the Kidney."

Hickman County's Annual Meeting.—Every physician of Hickman County with one exception attended the annual meeting of the Hickman County Medical Society, July 14, and that member was absent on account of having to accompany a patient to Paducah. The society met at the home of Frank Jordan. The special feature of the meeting, the Clinton *Gazette* says, was a picnic meal including squirrel stew and catfish. Among the guests was Congressman Voris Gregory of Mayfield, who in an address entitled "Then and Now" discussed the progress that had been made in medicine. Dr. Herbert H. Hunt of Mayfield also gave an address.

MAINE

Personal.—Governor Brewster has reappointed Dr. Adam P. Leighton, Jr., Portland, and Dr. William G. Chamberlain, Fort Fairfield, to the state board of registration of medicine for terms of six years; this is Dr. Leighton's third appointment, and he has been secretary of the board for the last five years; Dr. Chamberlain has served one term.

Increase in Death Rate.—The U. S. Department of Commerce announces that the death rate for Maine for 1926 was 1,437 per hundred thousand of population, as compared with 1,371 in 1925. The increase is accounted for by increases in the death rates for influenza, heart disease, nephritis, measles, whooping cough, tuberculosis and pneumonia. During the year, there was a decrease in the death rates for typhoid and paratyphoid.

Health Officer Resigns.—Dr. William J. Young, for several years head of the health department of Waterville, resigned, effective, July 9, to become assistant surgeon at the Eastern Barracks of the National Soldiers' Home at Togus. Dr. Young served overseas during the World War, and now holds a commission as major in the medical reserve corps. He was for several years college physician and coach at William and Mary College, Williamsburg, Va.; for a year, athletic director at the University of Maine, and for a year, medical examiner at A. and M. College at College Station, Texas, coming from there to Waterville.

MARYLAND

University News.—At the commencement of the University of Maryland, the president announced an endowment of $4,500 annually for the support of a professorship in biologic testing and drug assaying in the school of pharmacy, and an endowment of $1,500 annually for the support of a fellowship in pharmacology in the school of medicine.

Dr. Baer Honored.—A portrait of Dr. William S. Baer, associate professor of clinical orthopedic surgery, Johns Hopkins University School of Medicine, was presented to the Children's Hospital School, Baltimore, June 1, where he has been on the staff since the school was founded in 1903. Dr. Baer is shown standing over a crib in which lies a crippled child. The artist was Harold Knight.

Health Department Items.—The state department of health is making a survey of retail drug stores throughout the state with reference to the operation of the pharmacy law; as a result, pharmacies found in charge of persons not legally qualified to compound physicians' prescriptions have been notified of the requirements of the law, and warned that failure to have legally competent persons in charge would be sufficient cause for prosecution.——The healthmobile of the bureau of child hygiene of the state department of health has, since June 1, visited forty communities in Prince George, Charles, St. Mary's and Calvert counties, holding health conferences under the direction of the local health officer; 629 children were brought to these conferences. Regular child health conferences are being held as usual during the summer throughout the rest of the state.

MASSACHUSETTS

Personal.—Dr. Richard P. Strong, Medical School of Harvard University, Boston, has returned from an expedition to Africa in the interest of tropical medicine; the *Boston Medical and Surgical Journal* notes that a large amount of material was collected for study.

Licenses Revoked.—The state board of registration in medicine at a meeting, July 31, revoked the license of Dr. Ralph E. D. Hawley, Lynn, "because of an abortion"; the license of Dr. John J. Donoghue, Worcester, "because of the conviction of a felony," and the license of Dr. Arthur S. Hudson, Wilmington, "because of violation of the prohibition law and association with an unregistered person."

Massachusetts' Cancer Problem.—The highest death rate for cancer in any state in the union is said to be in Massachusetts. The commissioner of public health has stated that there are about 5,000 deaths from cancer each year. With the aid of recent legislation, a program has been developed in an effort to meet the cancer problem. It consists (1) of a cancer hospital which was recently opened by the state at Norfolk, and (2) of cancer clinics which are operating at Lynn, Newton, Springfield and Worcester, and of which others will be developed as resources warrant. Studies in the epidemiology of cancer are being conducted by the state department of health covering many phases of cancer. The records of cancer patients are being tabulated in a variety of ways. Visiting nurses throughout the state are filling out questionnaires which give information in detail about the habits of the cancer patient, and each nurse is obtaining from a noncancerous patient similar information as a control. Studies will be conducted at the hospital at Norfolk, and data obtained in a house to house survey in a selected community will be analyzed. The last issue of *The Commonhealth*, which is published by the state department of health, is very largely given over to discussions of the cancer problem.

MINNESOTA

Society News.—The meeting of the Northwestern Pediatric Society at Rochester, July 16, was attended by pediatricians from Kansas City, Iowa City, Minneapolis, St. Paul, Winona and Mankato, and among the speakers were Dr. Henry F. Helmholz on "Mode of Infection in Pyelitis"; Dr. Vernon B. Dowler, "Flat Feet in Young Children," and Dr. Samuel Amberg, "Case of Nephrosis."——The professional staff of the Mayo Clinic, Rochester, held a picnic on the afternoon of July 21 at Soldiers' Field.

Personal.—Dr. Gunnar Ahlgren of the University of Lund, Sweden, is spending four months as temporary associate in the metabolism laboratory of the Mayo Clinic, Rochester, introducing methods for the study of tissue metabolism which he has developed in conjunction with Professor Thunberg.——The following persons have been appointed fellows at the Mayo Foundation: Dr. Nicholas Eugene Lacy, Kansas City, Mo., otolaryngology; Dr. Leo P. Coakley, Omaha, otolaryngology and rhinology; Dr. Eli E. Christensen, Rochester, surgery; Dr. Maurice J. Reuter, Milwaukee, dermatology; Dr. Walter J. Siemsen, Parkersburg, Iowa, pediatrics, and Dr. John M. Berkman, Rochester, medicine.——Prof. Boris E. Linberg, dean of the faculty and director of the surgical clinic, University of Smolensk, Russia, who will study recent developments in American surgery for a few months, will be at the Mayo Clinic until the latter part of August, and then will visit medical institutions in Chicago, Boston and New York.

NEW YORK

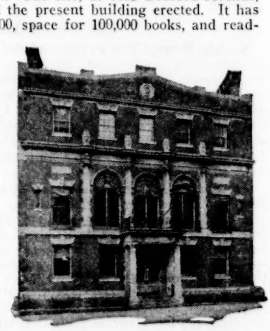
Glenfield Needs a Physician.—The village of Glenfield in Lewis County is looking for a resident physician, according to the state department of health, as the one physician there now has been ill for some time. Glenfield has about 400 people, many of whom are employed in lumbering operations. Inquiries should be addressed to Miss Mary O. Van Allen, secretary, Lewis County Home Bureau, Box 137, Glenfield.

Society News.—At the annual meeting of the Lake Keuka Medical and Surgical Association, more than 250 physicians

registered from twenty-one counties in New York and northern Pennsylvania; Dr. Albert M. Crance, Geneva, was elected president, and Dr. John A. Hatch, Penn Yan, reelected secretary-treasurer. Dr. James E. Sadlier, Poughkeepsie, and Dr. Joseph S. Lawrence, Albany, represented the state medical society at this meeting.——The Oneida County Medical Society voted, July 12, in favor of the Yale farm at Adler Creek as a site for a county tuberculosis hospital. The committee, appointed by the society to consider the selection of a site, examined before making a decision the Brucker site on the Walker Road, the Small property on the Walker Road, and various places near Boonville, Trenton Falls, Prospect, Remsen and Hinckley Lake.——The Associated Physicians of Long Island held their annual meeting at Shinnecock Hills Golf Club, Southampton, June 7. Eighty-nine persons were present. There was the usual luncheon, dinner and golf; many visited points of interest in the neighborhood, including the Southampton Hospital.——Dr. William H. Ross, Brentwood, invited the South Side Clinical Society and friends to his "Retreat" at Fort Salonga on Long Island Sound, June 18, for recreation and dinner.——The Medical Society of the County of Queens held an outing, June 14, at Harbor Inn, Rockaway Park, jointly with the Medical Association of the Greater City of New York.——Nassau County Medical Society held its annual spring boat ride, embarking from Charlie Johnson's, Freeport, at 3:30 p. m., for a sail down the bay and dinner.

New York City

Growth of Medical Society of the County of Kings.—At the residence of Dr. Adrian Vanderveer in Flatbush, in February, 1822, the Medical Society of the County of Kings was organized by a few physicians. Brooklyn has grown since then from a small city to a great center of population, and the Medical Society of the County of Kings has kept pace. It was the first county medical society in this country to own its own building. In 1858, the meetings were held at the Lyceum on Washington Street; in 1866, the meeting place was changed to the Hamilton Building, 44 Court Street; in 1875, to Everett Hall, 398 Fulton Street, and from there, in 1887, the society moved into its own building at 365 Bridge Street. That place was outgrown and was sold, in 1898, and meetings were then held in Apollo Hall. The question of buying its own home was raised again in 1894. The site, at 1313 Bedford Avenue, was then purchased and the present building erected. It has an auditorium seating 400, space for 100,000 books, and reading and conference rooms. In the July bulletin of the society, it is said that at monthly meetings every seat is occupied and the aisles and lobby crowded. Books are everywhere; cellars are full; store rooms are full, and committee rooms are banked with books. Part of the smaller meeting room on the top floor is fitted with desks and chairs and made into a secretary's office. The lobby is altered to accommodate workers. The foreign journal room is used as an office. There is a state of oversaturation. The building is too small to house those who would use it. The great library of the Medical Society of the County of Kings is a public medical library used by high school students, teachers, medical students, students from private schools, clergymen, scientific writers and other types of workers. And so there is talk among members of the need of a new building. The trustees recently acquired the corner at Bedford and Atlantic avenues which adjoins the library building. In the entire history of the Medical Society of the County of Kings, only two outside bequests of $1,000 each have been received. Everything that it has purchased has been paid for by the physicians themselves, and they do not intend now to inaugurate a drive for funds for larger quarters. They look to those citizens who have done much in a generous way for the community to help erect in Brooklyn a building worthy of the community and of one of the most vigorous local medical organizations in the country.



OREGON

License Restored.—The state board of medical examiners adopted a resolution, July 6, rescinding the revocation of the license to practice medicine of Dr. Dan E. Standard and reinstating him in practice. Dr. Standard's license was revoked by the board in 1925.

Society News.—The Eastern Oregon District Medical Society will hold its annual meeting at Wallowa Lake under the presidency of Dr. James C. Bartlett, August 6. Among the papers presented will be "Special Treatment of Active Clinical Tuberculosis" by Dr. Grover C. Bellinger, Salem; "Spinal Anesthesia" by Dr. William T. Phy, Hot Lake; "Rationale of Agencies for the Treatment of Cancer" by Dr. Robert C. Coffey, Portland, and "Medical Electricity" by J. E. Cole, Spokane, Wash.——The Clatsop County Medical Society gave a dinner, July 13, at the Hotel Astoria, Astoria, at which Dr. Frederick D. Stricker, state health officer, and Dr. Willis B. Morse, Salem, president, Oregon State Medical Association, were among the guests of honor.——Dr. John H. Fitzgibbon, Portland, was the guest of honor at a dinner and meeting of the staff of the Longview Memorial Hospital, Longview, July 13.

SOUTH CAROLINA

Health Center in Rural Community.—An inexpensive building has been erected at Adams Run for a community health center to serve a large rural negro population. The Harmon Foundation has made provisions for maintaining the health center for five years, assuming the entire expense the first year; two thirds of the expense the second year, and one third the third year; Charleston County will assume the financial responsibilities for the remainder of the period.

Two Months' Drive on Periodic Health Examinations.—Beginning August 1, the state medical society will conduct a campaign throughout the state to impress county medical societies with the importance of periodic physical examinations. The president of the state society, Dr. D. Lesesne Smith, desires that all county societies hold their meetings on the subject of health examinations during August and September. Outside speakers will be available for most of these meetings, and demonstrations of how to conduct a health examination, as well as lectures, will be on the program. Dr. Smith called a meeting in May, in Columbia, of leading physicians in the state to discuss this work. Most of the physicians present volunteered to go before county societies and other organizations to present the advantages of periodic health examinations. The trustees of the state medical society have presented to the trustees of the state medical college the request of the society concerning postgraduate instruction, and in September the college will give an intensive postgraduate program for one week. Members of the faculty, on request, will give postgraduate lectures and demonstrations before county medical societies throughout the year. The college will be requested to include in its postgraduate work lectures and demonstrations on proper methods of conducting periodic health examinations.

TENNESSEE

University to Give Postgraduate Courses.—It was announced, July 19, that the University of Tennessee College of Medicine will offer a series of postgraduate courses beginning with the 1927-1928 scholastic year, which opens, September 27. The courses will cover fourteen weeks' work, it is said, and registration will be limited to twelve in each course. The courses to be given this fall will be in otolaryngology, ophthalmology, roentgenology, pulmonary tuberculosis, diseases primarily affecting the blood, and orthopedic surgery; from January 25 to May 24, the postgraduate courses will be in diseases of the chest, diseases of the heart and circulation, gastro-enterology, gynecology, obstetrics, pediatrics, dermatology and syphilology, and urology.

Society News.—Dr. Stewart Lawwill, Chattanooga, addressed the Chattanooga and Hamilton County Medical Society, July 13, on "Diphtheria and Intubation."——Dr. Leonard E. Ragsdale, superintendent, Tennessee Home and School for Feebleminded, Donelson, addressed the Maury County Medical Society, July 11, on "Two Aspirin Tablets and a Coca Cola." According to the Columbia *Herald*, this was the largest meeting in the history of the county society.——Among others, Dr. Henry F. Clay, Henderson, Ky., addressed the Knox County Medical Society in June on "Ephedrine," and Dr. John Howard King, Nashville, on "Precancerous Dermatosis."——Dr. Granderson Hearn Bradley, Nash-

ville, addressed the Williamson County Medical Society, June 15, on "Bacillary Diarrhea of Children."——Physicians from Hardin, Lawrence, Wayne, Perry and Lewis counties met at Waynesboro, June 28, to organize a county society; they elected Dr. George C. Morris, Savannah, president, and arranged for a meeting in July, and for the presentation of four scientific papers by physicians of Savannah.

Community Cooperation and Clinic.—The Obion County Medical Society and the county health department cooperated recently in correcting certain physical defects of school children in that community which had been repeatedly reported through the school inspection service. When it was decided to hold a clinic to correct these defects, letters were sent to each physician and magistrate in the county explaining the plans, and the physicians instructed the county health officer, Dr. Clarence B. A. Turner, to make the arrangements. In order for a child to be admitted, the parents were required to sign a card which was countersigned by the family physician and the magistrate of the district in which the child resided. A church gave the use of its basement for the clinic; one department of the church was converted into a ward; one of the class rooms was used for the administration of anesthetics and the kitchen was used for an operating room. Fourteen children were admitted for operation as well as eight older persons. Local surgeons removed tonsils and adenoids, and nurses from county health departments and other ladies assisted. The state health officer, in commenting on this work, said, in part, that the problem of rendering medical service to those in need of medical attention was left where it should be—in the hands of the practicing physician. No case was admitted except as referred by the family physician, and no specialists were brought in from other communities. Another physician said that this clinic represented a splendid partnership between physicians and the county health department in Obion County.

WEST VIRGINIA

Society News.—The West Virginia State Medical Association is conducting negotiations for the purchase of a beautiful residence in Charleston for a permanent home for the state society. Plans are being formulated to raise the funds necessary, and it seems probable that within the next twelve months a state headquarters will be provided.

Personal.—Dr. Edwin F. Sheppard, of the staff of the Fairmont State Hospital, left, June 30, it is reported, for Jenkins, Ky., to become director of the Consolidation Coal Company Hospital.——Dr. Theodore R. Meyer has been reappointed health officer of Wood County for the fiscal year 1927-1928; Dr. Meyer is also health commissioner of the city of Parkersburg.

WYOMING

Personal.—Dr. George O. Hanna, Lingle, has been appointed health officer of Goshen County.——Dr. Thomas E. Marshall, Sheridan, has been appointed county health officer for a term of four years, succeeding Dr. Edwin E. Whedon.

Decrease in Death Rate.—The U. S. Department of Commerce announces that the death rate for Wyoming for 1926 was 806 per hundred thousand of population, as compared with 828 for the year 1925. The decrease was accounted for largely by decreases in the death rates from heart disease, typhoid and enteritis, tuberculosis and automobile accidents. There was an increase during 1926 in the death rates for influenza, pneumonia and whooping cough.

GENERAL

Medical Alumni Meeting.—The third annual meeting and dinner of the Ensworth-Central Medical College Alumni Association will be held in St. Joseph, Mo., during the clinical week in Kansas City, October 15-21, the exact date to be announced later. The secretary is anxious to enroll all graduates of Northwestern, Ensworth-Central Medical Colleges. The professors are eligible to membership, and are urged to attend. The names should be sent to Dr. Charles W. Fassett, secretary, 115 East Thirty-First Street, Kansas City, Mo.

Society News.—At the annual meeting of the American Orthopedic Association, San Francisco, in June, Dr. A. MacKenzie Forbes, Montreal, Que., Canada, was installed as president; Dr. Fred H. Albee, New York, was elected president elect; Dr. Willis Campbell, Memphis, Tenn., vice president; Dr. De Forest P. Willard, Philadelphia, secretary, and Dr. John L. Porter, Evanston, Ill., treasurer.——Dr. George M. MacKee, New York, will address the American Stomatological Association at its next meeting, October 19, at the Columbia University Club, 4 West Forty-Third Street, New York, on "Syphilis of the Mouth," illustrated with lantern slides.——Dr. Fitch C. E. Mattison, Pasadena, Calif., was elected president of the American Therapeutic Association at the annual meeting, held, May 14-16, at Washington, D. C., and Dr. William J. Mallory, Washington, D. C., was reelected secretary. The next meeting will be held in Minneapolis in 1928.

Eight Year Total of Automobile Deaths Enormous.—In the four weeks ending July 16, 573 persons were killed in automobile accidents in seventy-seven large cities of the United States, as compared with 482 for the corresponding period last year. For the fifty-two weeks ending July 16, the total number of persons killed in automobile accidents in these cities was 6,986, as compared with 6,393 for the fifty-two weeks ending July 17, 1926. The rate for the last period is, therefore, 21.7 per hundred thousand of population, as against the rate of 20.2 for the preceding fifty-two weeks. That is an increase of 7 per cent in the rate in a single year. During the four weeks ending July 16, no fatalities were reported to the U. S. Department of Commerce by five of these cities: Kansas City, Kan.; Oakland, Somerville, Tacoma and Waterbury. The National Automobile Chamber of Commerce is said to have reported that the number of persons killed in the United States in automobile accidents in the eight years ending, Dec. 31, 1926, was 137,017, and that the number injured during that period was about 3,500,000.

Census of Nurses in Industry.—The National Organization for Public Health Nursing is preparing to make a census of nurses in industry to determine as accurately as possible how many nurses are working in industry; where and in what industries they work, and what they do. The study will include all types of business, such as manufacturing interests, mining, commerce, trade, transportation and public service, and also the various industries that maintain nursing organizations or give nursing service to employees. The National Organization for Public Health Nursing completed a survey of public health nurses in the United States in 1926, and now it proposes to survey nurses in industry. The organization will appreciate receiving from any one names of firms, companies, offices, associations, hotels, insurance companies and other industries which employ nurses, as well as suggestions as to whom to write for information about nurses employed in industry. All information regarding nurses in industry should be mailed to Statistical Service, National Organization for Public Health Nursing, 370 Seventh Avenue, New York.

General Wood Requests Funds to Combat Leprosy in Philippines.—The New York *Times* interviewed Gen. Leonard Wood, Governor-General of the Philippine Islands, now on leave in the United States, July 24, concerning leprosy in the islands. General Wood, who expects to return to the Philippines in October, hopes to rid the islands of leprosy before he retires. He said that encouraging progress has been made during the last six years, and that about 1,000 lepers have been sent home cured from the Culion leper colony in that period (The Campaign Against Leprosy, editorial, THE JOURNAL, May 28, p. 1718). There are still more than 5,000 lepers at Culion, and a total in the islands of about 12,000. Culion is an island about 200 miles south of Manila which is given over wholly to the leper colony. The island is 20 miles long and 9 miles wide; it is planned to open up the interior, so that lepers under treatment at the hospital may be placed on farms of their own when the disease is under adequate control, and pending their complete recovery. The government of the Philippines is spending now about 2 per cent of its income to carry on the Culion leper colony; it cannot do more. General Wood is therefore requesting aid in this country to be spent under the supervision of the Filipino government for new construction at the Culion leper colony and for new laboratories and better equipment. The current expenses of the Culion leper colony will continue to be defrayed from public revenues. A large committee of prominent persons have made an appeal to New Yorkers to assist in raising this fund. An intensive drive for the same purpose is being conducted on the Pacific Coast.

Report of United Fruit Company.—The general manager of the medical department of the United Fruit Company, Dr. William E. Deeks, New York, has published a report for the year 1926. The United Fruit Company maintains fully equipped hospitals at Port Limón, Costa Rica; Almirante, Panama; Quiregua, Guatemala; Santa Marta, Colombia; Preston, Cuba, and Bales, Cuba, as well as dispensaries in

its tropical divisions and dispensary service with sanitary staffs in the ports of New Orleans, Boston and New York. The medical department of the company provides medical care for its employees and their dependents, and for the inhabitants of communities contiguous to their plantations when no other medical service is available. It provides medical care for passengers and crews on its steamships, makes physical examinations of prospective employees, and recommends and supervises in matters pertaining to sanitation. The total number of persons dependent on the medical department of the company for treatment during 1926 was 138,364, and the number of persons treated in hospitals was 29,410. Of the endemic diseases in the tropics, malaria was of the greatest economic importance to the company in its relation to labor efficiency, and was directly responsible for from 38 to 40 per cent of all hospital admissions; malaria caused more poverty and loss of man power than all other endemic diseases combined. During the year, the medical department arranged for several well known physicians and scientists to perform special duties for the company, such as malaria surveys, investigation of the sand-fly nuisance in Puerto Castilla and research work on a precipitin test in malaria. The report contains a number of papers on these special studies.

Medical Society of the Missouri Valley.—The September 14 meeting of the Medical Society of the Missouri Valley to be held at Des Moines, Iowa, will include clinics or addresses by the following persons: Harry W. Dahl, Des Moines, Iowa; Lewis J. Pollock, professor and chairman of the division of neurology and psychiatry, Northwestern University Medical School, Chicago; Walter L. Bierring, Des Moines, Iowa; Anton J. Carlson, professor of physiology, University of Chicago; Charles C. Tomlinson, assistant professor of dermatology and syphilology, University of Nebraska College of Medicine, Omaha; Paul M. Bancroft, B.S., fellow, department of pathology, University of Nebraska College of Medicine, Omaha; Arthur D. Dunn, director, department of experimental medicine, University of Nebraska College of Medicine, Omaha; Bernard M. Kully, instructor in otolaryngology and anatomy, Creighton University School of Medicine, Omaha; Caryl A. Potter, St. Joseph, Mo.; William T. Bovie, Ph.D., professor of biophysics, Medical School of Harvard University, Boston; Richard L. Sutton, professor of dermatology, University of Kansas School of Medicine, Kansas City, Kan.; Nelse F. Ockerblad, associate professor of clinical urology, University of Kansas School of Medicine, Kansas City, Kan.; Herman L. Kretschmer, professor of urology, Rush Medical College, Chicago; William T. Coughlin, professor of surgery and director of department, St. Louis University School of Medicine, St. Louis, Mo.; Ralph H. Major, professor of medicine, University of Kansas School of Medicine, Kansas City, Kan.; Clifford C. Nesselrode, associate professor of surgery, University of Kansas School of Medicine, Kansas City, Kan.; James F. McDonald, professor of anatomy, Creighton University School of Medicine, Omaha; David P. Barr, Busch professor of medicine, Washington University Medical School, St. Louis, Mo.; F. B. Langdon, Des Moines, Iowa; Everett D. Plass, professor and head of the department of gynecology and obstetrics, State University of Iowa College of Medicine, Iowa City; Arthur Steindler, professor and head of the department of orthopedics, State University of Iowa College of Medicine, Iowa City; Fred M. Smith, professor and head of the department of the theory and practice of medicine, State University of Iowa College of Medicine, Iowa City.

FOREIGN

Personal.—Dr. R. de la Poer Beresford has resigned as medical officer of health for the Oswestry rural district, England, after fifty-four years' service.——Prof. von Eiselsberg of Vienna gave the Lister lecture at the Royal College of Surgeons of England, July 7.——A memorial to the late Dame Louisa Aldrich-Blake, formerly dean of the London School of Medicine for Women, was unveiled at Tavistock Square, London, July 4; the memorial is located about 200 yards from the headquarters of the British Medical Association.

Postgraduate Course in Digestive Pathology.—A special course in digestive pathology, organized by Prof. F. Gallart y Monés, in collaboration with sixteen hospital physicians and university professors, has been announced by the Hospital de la Santa Cruz of Barcelona, Spain. The course will cover a period of three months, beginning October 5, and will comprise fifty-eight lectures on such subjects as: physical pathology of intestinal digestion, Dr. Gallart; surgical therapeutics of the intestine, Dr. Puig Sureda; surgical therapeutics of the stomach and duodenum, Dr. Corachán, and roentgenotherapy and curietherapy in digestive pathology, Dr. Pujol y Brull. Patients will be presented daily, and their conditions discussed in the clinic and dispensary of the hospital.

Government Services

Promotions to Rank of Colonel in Medical Corps

The war department has announced the promotion from the rank of lieutenant colonel to colonel of the following officers of the medical corps; all of these officers have been in the service for many years:

Henry H. Rutherford
Ernest L. Ruffner
Patrick H. McAndrew
George M. Ekwurzel
Carroll D. Buck
John H. Allen
Robert U. Patterson
Roger Brooke
Wallace DeWitt
Matthew A. De Laney
Paul S. Halloran
Kent Nelson
Peter C. Field
Herbert G. Shaw
Louis Brechemin, Jr.
Clement C. Whitcomb

Appointments to Public Health Service

The Surgeon General, U. S. Public Health Service, announces the following appointments of physicians to the service in the grade of assistant surgeon, effective the date of oath:

Ralph Horton, Pinesville, Mo.
Gerald M. Kunkel, New Orleans
Edmond T. Lentz, Chicago
W. J. Bryan McAuliffe, Baltimore
Fred W. Caudill, New Orleans
Albert S. Irving, New Orleans
William W. Nesbit, Norfolk, Va.
George D. Boone, Jr., Staten Island, N. Y.
Leon O. Parker, Staten Island, N. Y.
Bernard J. Macauley, New Orleans
Charles B. Stacy, New Orleans
John R. Murdock, San Francisco
Thomas C. Kienzle, New Orleans
Cecil C. Swann, New Orleans
Leo J. Hand, Chicago
George R. Welch, New Orleans
George W. Buchanan, Staten Island, N. Y.
Clarence D. Kosar, Staten Island, N. Y.
Joseph F. Van Ackeran, New Orleans

Hundreds of Reserve Officers in Summer Training

Hundreds of medical reserve officers of the U. S. Army are taking advantage of the training offered in the camps throughout the country this summer. An endeavor has been made to concentrate the training of these officers at the following places, although many are training elsewhere: Carlisle Barracks, Pennsylvania, June 12-26 and July 3-17, about 650 reserve officers; Fort Snelling, Minnesota, June 12-26 and July 3-17, about 300 reserve officers; Camp Lewis, Washington, June 12-26 and July 3-17, about seventy-five reserve officers; Fort Sam Houston, Texas, July 17-31, about sixty reserve officers. The medical department of the army has made a special effort to have equipment and instructors available at these stations, so that the approved training programs can be carried out in a uniform manner. The reserve personnel undergoing training at the Carlisle camp came from the First, Second, Third, Fourth and Fifth corps areas; that for the Fort Snelling camp from the Sixth and Seventh corps areas; that for Camp Lewis from the Ninth corps area, and that for Fort Sam Houston from the Eighth corps area. The June camps were considered basic camps, and the personnel undergoing training consisted principally of junior officers. The instruction afforded them was largely individual, covering physical training, drill, mobilization duties, military hygiene and sanitation, and medical tactics. In the July camps, special effort was made to provide unit training. While some of the instruction was general in character, for the most part unit commanders were made to assume responsibility for the training of their respective units and to carry out the program laid down. Instruction included work on the mobilization plans of the respective units represented (medical regiments, surgical hospitals, evacuation hospitals), and a review of the tactics and technic of the medical department and of problems and terrain exercises covering the employment of the units in different situations.

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 16, 1927.

The Heating of the New Reptile House at the Zoological Gardens: A Problem in Reptile Hygiene

Most reptiles can be kept healthy only when the water in which they bathe, the rocks on which they bask, and the walls surrounding them are kept at a temperature of about 80 F.; but it is necessary to vary this optimum in different cages. They also need good ventilation. They must have sunlight, or when the London clouds and fogs shut this off they must have a substitute. These conditions have been fulfilled in a remarkable manner in the new reptile house at the Zoological Gardens. It is a building of one floor of dimensions less than 180 by 80 feet; it has about 20 miles of electric cable, and cages of a few feet square have from twenty-eight to 200 electrical connections. Partly to save waste of current and partly to provide for the comfort of visitors, the heating elements are confined to cages and dens in most cases separated from the public passages by glass windows. Condensation of the moisture in the dens would tend to obscure the glass by a deposit of mist; this has been overcome by focusing rays of dark heat from special radiators directly on the glass. Other sets of radiators are placed so as to throw pools of brilliant artificial sunlight, rich in ultraviolet rays, directly on rocks and ledges on which the reptiles may bask in the full sight of the public. A third set supplies ordinary lighting to be used on dull days or after dark. Full advantage, moreover, has been taken of what sunlight the London sky may give by vitaglass (glass permeable by the ultraviolet rays) windows where possible from the public gaze. On a cloudless summer day the amount of direct heat from the sun is almost sufficient to give the necessary temperatures, but to an extent varying from hour to hour, and from cage to cage, as the sun changes its direction and elevation. So also on a dark winter day the full supply of artificial lighting at once sends up the temperature. The fluctuations would be dangerously great with a heating system of the usual hot water or steam types. The electric current supplied to the heating elements in each cage is controlled by automatic thermostats so designed that the current is automatically shut off when the temperature reaches 83 F., and automatically restored when it falls to 77. Thus, if heat is coming from the sun or from the artificial lights, so much less current will be supplied to the heaters. The temperature might rise to a dangerous point or fall to a dangerous point from some failure in the thermostats or in the heating elements themselves. To meet this an independent telltale device has been installed, linking each cage to an indicator board in the head keeper's room. If it rises to 85 a bell rings and a small red light shows against the number on the board representing the defective cage; if the temperature falls to 75, the bell also rings and a green light shows.

The Bottled Remedies Fetish

"The bottle of medicine habit is nothing but a persistence of a depraved superstition or a form of medieval fetish worship," said Prof. F. E. Wynne, health officer for Sheffield, lecturing on "Sunlight and the Return to Nature" to the People's League of Health. Attacking the widespread use of drugs, he said that thousands of pounds spent every year on drugs under the national health insurance act were a pure waste of money. If that expenditure ceased, instead of a deterioration in public health there would be a big improvement. Every physician who went through a long and expensive training expected to be able to earn a "living" at the end of it. He might long to be a teacher of his patients, but if he yielded to that longing he must make up his mind to retire into the wilderness of poverty. The public put great faith in the "bottle of medicine" cure for practically every disease. The popular conception of disease and its treatment was apparently that there was a list of diseases unrelated and separate, and also a list of "remedies" which could be bottled, and the clever physician was the one who had the longest list at his finger tips. Most mischievous of all was the doctrine that all diseases might be attributed to "chill," with the consequent horror of fresh air, especially of "night air," which, in cities, at all events, was in reality definitely purer than the "day" air.

A Chair of Dietetics at the London University

The University of London has decided to found a chair of dietetics. The idea of this chair of dietetics seems to be due to the health campaign articles by Sir William Arbuthnot Lane in the *Daily Mail*. In December, 1926, a woman reader, impressed by Lane's articles, offered $50,000 toward the cost of founding a chair of dietetics in the University of London. In May, 1927, Messrs. A. Wander, Ltd., manufacturing chemists, offered a further $50,000 for the same purpose. Thus a fund was formed which has made possible the setting up of this chair.

Vital Statistics

The registrar-general's analysis of the births, marriages and deaths in England and Wales in 1925 has just been published. It shows that as a result of the continuous shrinkage in the birth rate with an approximately constant death rate during the last few years, the natural increase of population by excess of births over deaths is steadily falling. As previously reported in THE JOURNAL, the first quarter of the present year showed an actual excess of deaths over births. Since 1920, when it rose to 25.5 per thousand, the decline in the birth rate has been continuous. The considerable fall in the year under review was succeeded by an equally significant decrease in 1926, and it is difficult, comments the registrar-general, to assign limits to the decline and to discern when and where the trough of the present depression is likely to be reached. The birth rate in this country attained its highest values during the period 1865-1880, when it exceeded 35 per thousand of population. From that time it diminished by gradual and practically continuous stages to 23.8 in 1914; it is now 18.3, little more than half the maximum figure of 36.3 recorded in 1876, and having regard to current economic and industrial conditions appears likely to remain unprecedentedly low. Many remarkable changes in relation to the deaths of infants have occurred within the last eleven years. Measles, whooping cough and diphtheria all exhibit substantial declines. The fall recorded for tuberculosis is much greater; indeed, this disease is rapidly losing all importance as a contributor to the mortality of infancy. The rate has fallen from 6.41 deaths per thousand births in 1901 to 1.26 in 1925. At all the ages under 75 the mortality of each sex was lower in 1925 than it was before the war. At all ages jointly the crude rate has fallen by 12.8 per cent; but when allowance is made by standardization for increased age of the population, the extent of the fall is increased to 20.7 per cent. As many as 5,365 cases of smallpox were notified—by far the highest number since 1911—but only nine deaths were recorded. Tuberculosis accounted for 40,387 deaths: males, 22,234; females, 18,753. The figure for males is the lowest recorded during the present century except that of 22,085 in 1923, and that for females is, without exception, considerably the lowest. Deaths from cancer in 1925 numbered 51,939: males, 24,002; females, 27,937. These numbers are the highest yet recorded. Of the total deaths, 40,832 were referred to

carcinoma, 2,729 to sarcoma, and 8,378 to cancer. Increase of cancer mortality continues to be much more rapid for males than for females. Since 1911-1914 the increases in the standardized rates have been as follows: males, 13 per cent; females, 2 per cent; both sexes, 6 per cent.

Quarrymen and Tuberculosis: Injurious Slate Dust

A report by Dr. T. W. Wade of the Welsh board of health on an investigation made by him into the high mortality rate from tuberculosis of the respiratory system among slate quarrymen and slate workers in the Gwyrfai district of Caernarvonshire has just been issued by the ministry of health. While the investigations were confined to one district, the conclusions arrived at apply to the whole of the Welsh slate-bearing areas. It has been thought that the high rate of tuberculosis among the quarrymen of North Wales is mainly due to poor feeding, particularly to excessive tea drinking. The report recognizes diet as having played a part in the causation of the high death rate. But with regard to the slate workers, the problem of prevention of lung disease among them, arising out of their occupation, is the dust problem. The Gwyrfai district has always suffered a high death rate from tuberculosis of the respiratory system. In the quinquennium 1909-1913 it was 1.88 per thousand of the population for males and 1.43 for females, as compared with 1.19 males and 0.89 for females for England and Wales. During the period 1921-1925 the rate rose to 2.16 for males in the Gwyrfai area, as compared with a decrease to 0.91 for the whole country. From 35 years and onward, and particularly in the later periods of life, the mortality rates are much higher among the "quarriers and slate workers" than among the rest of the male population. The rockmen, who are the slate getters, work in the open and are exposed to all weathers. The splitters and dressers work in sheds, which are not overcrowded, but artificial means of ventilation are not employed. The splitters and dressers as a rule sit on the floor, which is covered with slate débris and dust. While the men engaged in the quarries are not subjected to much slate dust, the men in the sheds are constantly inhaling it. From long contact the clothes of the workers in the sheds are saturated with slate dust. The floors of the sheds are covered with dust, and the ledges and beams even to a height of 20 feet or more from the ground are covered on their upper surfaces with fine dust to a depth of half an inch. Currents of air and vibration from the machinery keep the dust floating in the atmosphere. Quartz formed 35 per cent of the whole, and particles of this substance from 1 to 5 microns in diameter were plentiful. Mica and chlorite formed the bulk of the remainder, mica predominating. Dr. Wade concludes that the workers in the slate sheds are subject to an injurious dust. How to eliminate this dust from the atmosphere breathed by the workpeople is a matter mainly for technical advisers.

Pharmacists as Bacteriologists, Pathologists and Roentgen-Ray Operators

Important changes in the training of pharmacists in order that they may be qualified to work as bacteriologists, pathologists and roentgen-ray operators were advocated at the opening of the British Pharmaceutical Conference by Dr. T. H. Burn, director of the pharmacologic laboratory of the society. He said that there had been a great development of the methods of discovering the nature of disease and of curing disease during the past thirty years, but in many ways the practice of the physician had not been altered to any great extent, and the benefits of the medical discoveries had not in the main been made available to the general public. This was due to the fact that each new discovery involved a new technical method. These methods were now so numerous that it was impossible to teach them to the medical student while he was taking his course, and they took so much time that a physician could not apply them. A medical consultant often formed his opinion of the condition of a patient as the result of roentgen-ray, blood, bacteriologic and perhaps other examinations. The general practitioner had none of these aids. Was there not there an opening for the pharmacist? All these examinations depended on the tests, which offered no more difficulties than did such chemical processes as the pharmacist at present learned. But if they were to be carried out so as to be of value, they demanded a thorough training. The pharmacists' training should include a course in bacteriology and pathology and the use of roentgen-ray apparatus.

Epidemic Encephalitis

During the past five years nearly 5,000 persons have died in England and Wales of epidemic encephalitis. During the same period 11,420 cases of the disease have been notified, so that nearly half of all those stricken by epidemic encephalitis in this country have succumbed. There were 2,267 fresh notifications in 1926, 2,635 in 1925, 5,039 in 1924, 1,025 in 1923, and 454 in 1922. The epidemic wave, which reached its highest point in 1924, has therefore by no means subsided, though it has been reduced in magnitude. As stated in a previous letter, the London County Council has provided a treatment center for patients who have partially recovered, an effort which has already yielded valuable additions to the knowledge about the disease. But Dr. A. F. Tredgold, an expert on mental deficiency, has pointed out that it is urgently necessary to provide an institution where all child victims of epidemic encephalitis whose minds have been unbalanced may receive continuous and special treatment. The medical officer of Brixton prison confirmed this and in his report says: "We have had one or two postencephalitis delinquents who resemble congenital defectives in their mental characteristics. Those cases are, apparently, hopeless, and it is feared that their number will increase unless some method of curing or protecting against [the disease] is discovered."

The Therapeutic Substances Act

The Therapeutic Substances Act will soon come into force. The regulations are very stringent. The therapeutic substances to which the act applies cannot be manufactured for sale without a license. Applicants have to satisfy the licensing authority that they will observe various conditions in respect of adequate staff, premises and plant, proper testing facilities, the keeping of permanent records, inspection, reports and samples. A therapeutic substance advertised or sold as a proprietary medicine or contained in a medicine so advertised or sold must be sold sealed in a previously sterilized glass container, so as to preclude access of bacteria. The label of the container must show the name of the substance, the name and address of the manufacturer, the number of his license, a distinctive batch number, the date on which the manufacture of the batch was completed, and the nature and percentage of any added antiseptic. The label must further contain, where required, statements of minimum potency and maximum toxicity; in such cases the label must specify the date up to which the substance may be expected to retain the required potency or not to develop an excessive toxicity as the case may be; and there must be a statement of the precautions necessary for preserving the properties of the contents until that date. Sale after that date is prohibited. Schedules to the regulations prescribe the standards of strength, quality and purity in respect of the various substances. Provision is made for testing strength, quality, sterility and freedom from abnormal toxicity for dealing with samples, and for preparing and using mediums. A licensee is allowed to issue a therapeutic substance to physicians in emergency, though he does not have any filled containers in stock, but here there are careful safeguards.

PARIS

(From Our Regular Correspondent)

July 6, 1927.

Pulmonary Tuberculosis as a Sequela of War Gas Injuries

Those injured by war gas have formed societies which demand pensions of the same amount as those received by the tuberculous, on the ground that their cases are similar and that tuberculosis is sure to develop in them. Professor Achard and Professor Sergent have stated that the war gassed are no more likely to develop tuberculosis than are ordinary subjects. As a result, they have been made the object of unpleasant personal manifestations on the part of the societies. Sergent has recently taken up the question again before the academy, basing his remarks on his more recent experience as well. Since 1919, Sergent has admitted to his hospital service forty-eight patients who had been previously gassed. Among these, twenty-two bearers of significant respiratory sequelae did not show any signs of tuberculosis. Twenty-six of them were tuberculous, but the gas injuries that they had received were only slight and did not necessitate their evacuation by ambulance. In twenty-four of the latter, the first manifestations of tuberculosis did not appear until from three to eight years after the infliction of the slight gas injuries; nor did they (except in six cases) present in the interval any disturbances indicating a sequela. Those who received a heavy dose of war gas are more likely to develop other respiratory diseases than tuberculosis. However, the differential diagnosis in these cases is difficult. Sergent, in conclusion, suggested that the government grant pensions, in amounts equal to those received by the tuberculous, to persons suffering from grave effects of mustard gas, for such patients have a lung disease that is practically incurable, while their general situation is much more wretched than that of most tuberculous persons, for they are unable to do any regular work, and yet their condition does not justify assigning them to antituberculosis sanatoriums.

Social Insurance Legislation

The Syndicat des médecins de la Seine has had printed 60,000 copies of a circular in which it affirms that the physician is not hostile to the principle of social insurance, but only desires to point out the disadvantages sure to result for the public from such a system of collective state medicine as is proposed. It is inadequate for the insured and debasing for the dignity and morale of the medical profession, as has been proved in countries that have adopted the system. The *syndicat* demands that, at least, the insured shall be left free to choose the practitioner he wishes to treat him, and that he be permitted to pay directly to the physician the established fees, without interposition of a health insurance society, which would give rise to regulations administered by an army of expensive and caviling functionaries, and lead to political abuses of all kinds and to constant discussions and bickerings. The circular of the *syndicat* suggests further that the insured patient deal directly with his physician, and that the health insurance society reimburse him for his outlay for medical attendance and medicine.

Medical Consultations by Wireless at Sea

Following the example of the United States, wireless medical consultations at sea are beginning to be adopted by French boats as well. It has been suggested furthermore that receiving stations be established in hospitals along the seashore, in order to complete the organization of this special type of service. At a recent conference of Red Cross societies held in Oslo, Norway, questions connected with this means of succoring the sick and wounded in time of peace were discussed. One important reason for consultation by wireless is to secure information relative to quarantine regulations in the port of destination.

Crusade Against Alcoholism in the French Colonies of Africa

A decree dated June 18, 1927, prohibits in French Equatorial Africa the consumption (or the holding in possession with a view of consumption), by the natives, of any distilled beverages, or of other beverages containing more than 14 per cent alcohol. Supplying the natives with beverages thus prohibited is a misdemeanor entailing severe penalties. The object of the decree is to eliminate the abuse of alcohol, which is a constant cause of disease, of weakening of resistance to climatic conditions and to regional epidemics, and, finally, of an increased mortality among native workmen.

BELGIUM

(From Our Regular Correspondent)

June 1, 1927.

The Superior Council of Colonial Hygiene

A royal decree has created a superior council of colonial hygiene, which will have its seat in Belgium. The duties of the council will be: (1) to investigate everything that will contribute to the progress of hygiene in the Belgian Congo and to formulate in that connection such proposals as it deems advisable, and (2) to give its opinion on questions of a sanitary and hygienic nature that may be submitted to it by the minister for the colonies. The members of the council perform their duties without compensation.

The Crusade Against Measles

It is an accepted fact that measles in a child can be prevented or rendered mild by the injection of blood serum from measles convalescents. The city of Brussels has created a service at which this method of prophylaxis is given free of charge. When a practitioner applies to this service, the physician in charge will inquire into the case, and will usually accompany the practitioner to the family in question and proceed with the immunization of the children.

A Demonstration of Public Health Work

In a previous letter, reference was made to the special demonstration of health work that the Red Cross undertook in Jumet. The city was organized as a health center, which comprised a service of visiting nurses, a consultation center for future mothers, a consultation center for infant care, a free milk depot, a service of school medical inspection, an antituberculosis dispensary, a dispensary for combating venereal disease, a dispensary for mental hygiene, and a service of dental hygiene. Of the 30,000 inhabitants of Jumet about 6,000 participated in the event. This result was secured at a cost that did not exceed 3 francs per inhabitant for the whole year, and without causing any disturbance of the relations of the physicians to their clientele.

Creation of a Medical Argus

The Féderation médicale belge, which is constituted by the union of all the medical societies of Belgium, has opened a new section in the monthly bulletin that it publishes. The department will publish all that appears in the political press that has a special interest for physicians. The object of the innovation is to keep the medical profession abreast of all controversies and to centralize the publication of documents of importance, particularly with regard to conflicts with the mutual aid societies.

Penetrating Telecurietherapy

Dr. Cheval has communicated to the Académie royale de médecine a form of telecurietherapy so called, by means of which he can irradiate two patients at the same time with

4 Gm. of radium distributed over an area of 16 sq. cm. One patient is placed above the radium and the other is stationed below, their bodies being arranged crosswise with relation to each other. Heretofore he has hesitated to publish any results lest they might prove premature; but he has reached the conclusion that it is feasible to irradiate with heavy external doses patients with deep-lying tumors, provided one has a sufficient quantity of radium suitably filtered and the rays are localized by a sufficient quantity of lead (8 cm. at least) to prevent all action in any other direction than that desired. The radium must be placed at a proper distance from the skin. The organism will endure enormously large doses of ultrapenetrating rays without the general condition of the patient being injured. As a complement to Cheval's communication, Dr. Dustin has published a series of researches on the radiobiologic aspects of epitheliomas of the cervix of the uterus treated by telecurietherapy.

Medical Investigation of Safety Methods Applicable to Common Carriers

At the Institut des hautes études de Belgique, Dr. Sollier delivered an address recently on the influence of physicians in the introduction of safety methods applicable to common carriers. The institute has organized a course of instruction in psychotechnics, including all its applications to the practical work of vocational guidance.

Treatment of Pernicious Anemia

In a communication presented to the Academy of Medicine, M. Lemaire reported his results in ten cases of pernicious anemia in which the Minot and Murphy treatment was employed, a regimen characterized chiefly by the use of liver and fruits. The condition of the patients improved rapidly in every instance. The disappearance of fatigue and drowsiness and the return of strength ran parallel to the marked increase in erythrocytes, the average gain in red blood corpuscles, during the first month, having been two million.

Red Cross Propaganda

At the instance of the Red Cross Society of Belgium, a stationers' supply company has prepared a collection of forty different covers for school tablets, setting forth the various activities of the Red Cross—its main purposes, its public health maxims, first aid in case of accident, civic education in health problems, and the scope of the work of Red Cross nurses.

MADRID

(From Our Regular Correspondent)

July 6, 1927.

Vindication of Marañón

Dr. Marañón was hardly out of jail, where he had been thrown for holding opinions contrary to those of the present government, when he was called to the royal palace to see a patient by special request of the queen dowager. Soon after hearings were held in his case, and at the first session the army court held that Marañón was absolutely free from guilt. In a previous letter mention was made of the fact that Dr. Marañón had already paid the 100,000 pesetas ($17,000) fine visited on him, regardless of the outcome of the court proceedings.

A Physician's Gift to the Home for Physicians' Orphans

The Prince of Asturias College, i. e., the home of physicians' orphans, has received a gift from a Madrid physician, Dr. Felipe Cea. Most of his fortune, namely, 617,000 pesetas (over $107,000) was willed for this purpose. Dr. Cortezo, chairman of the board of trustees, is planning to erect a new building which will enable the institution to care for 200 boys. In addition the orphanage at Pinto will continue receiving girls. The law compels local medical societies to contribute to the support of the home in exchange for their privilege of filling vacancies among the inmates. Among the many difficulties facing Spanish physicians—an increasing surplus in the profession, competition on the part of the government through free dispensaries and stations, and finally increased taxes and high cost of living—the physicians can at last see a ray of light, not precisely for themselves, but for their orphans, if these succeed in getting one of the three hundred places at the home.

A Physician in the Academy of Letters

In the Academy of Letters, the supreme court as regards the Spanish languge, three physicians sit at present: Cortezo, Cajal, and now the Count of Gimeno. The audience included on his reception writers, artists, singers, musicians and a few physicians. The subject of his speech was, "Metaphors and Similes in Scientific Literature." His long teaching experience has convinced the Count of Gimeno that those aiming at success in writing must either couch old ideas in a different way or find a common term which, combined with the old one, will give it more force and light. Comparison teaches, and when similitude embodies a superior form of expression, the simile not only teaches but attracts and charms. The secret lies in delicate feeling, masterful execution, a certain innate good taste, study and work and polish. Dr. Gimeno is the only living Spaniard belonging to the four existing royal Academies of Medicine, Fine Arts, Physical Sciences and Letters. He has been a member of the cabinet as often as he has wished to be, in addition to holding a chair in the Madrid medical school.

Death of Dr. Cardenal

Dr. Salvador Cardenal of Barcelona has died at the age of 74. He had long been the first surgical personality in Spain. Although he never was on the staff of any teaching institution, the Barcelona medical school appointed him an honorary professor on the occasion of the fiftieth anniversary of his graduation. In addition to introducing in Spain first antiseptic surgery and then aseptic methods, he was an able operator and even more an unusually skilful diagnostician.

Tribute to Cortezo

Dr. C. E. Cortezo, editor of *El Siglo Médico*, president of the National Academy of Medicine and of the Privy Council, attended recently the congress of the Latin medical press. During his stay in Paris the General Association of Students honored him with an appointment as Eternal Student *amoris causa*.

Biochemical Study of Cancer

Dr. Martínez Nevot, chief of the chemical section of the Cancer Institute, gave a lecture at the National Academy of Medicine on chemical changes in the blood of patients with cancer who have been treated with roentgen rays. His research may be summarized as follows: Blood dilution increases, as shown by Bernhardt, Voltz and Schlagintweit; blood sedimentation speed also increases; as to nitrogenous substances, those having large molecules increase with the exception of fibrinogen, and those having small molecules, and especially urea, decrease; Ehrlich's diazo-reaction becomes positive, thus proving that roentgen rays exert a catabolizing action on nitrogenous bodies in the blood as well as facilitating their renal discharge; sugar decreases in a high percentage of cases and roentgenkater becomes worse as the blood sugar increases; the case showing the largest decrease in sugar was of cancer of the parotid which is important in view of the analogous function of this gland and the pancreas; chlorides first increase in the blood and decrease in the urine, but they also increase in the latter after a few

hours; the decrease of the alkali reserve, invariable in all patients with cancer, becomes even more marked after irradiation; the p_H also shows decrease.

Active Campaign Against Cancer

The Spanish League Against Cancer is carrying out an active campaign. After the conclusion of a series of lectures at the National Academy of Medicine, the league held an imposing meeting in the assembly room of the Cancer Institute attended by the whole royal family, the court and all the government officials. Dr. F. Aguilar, the general secretary, read a report on the activities of the league in the educational, curative and experimental fields. He also praised the interest Queen Victoria had taken in its work and referred to the organization of similar bodies in the provinces. Dr. Badelin brought greetings from the French League Against Cancer. Dr. Goyanes, the director of the institute, stressed the importance of the establishment of a biologic cancer research laboratory and a pavilion for inoperable cancer cases. Immediately afterward, the cornerstones of these two buildings were laid.

PRAGUE

(From Our Regular Correspondent)

July 1, 1927.

Sickness Insurance and Venereal Disease Stations

The question of consulting stations for venereal patients has been discussed lately on several occasions. The discussion was provoked by the growth of sickness insurance and the old age and invalidity insurance which were added to the insurance scheme of the country last year. The sickness insurance system does not fulfil its task in the handling of venereal patients. Venereal patients fear that, under the sickness insurance system, records might make their malady a matter of public knowledge. The insurance bodies themselves do not care to undertake the expense of treating venereal patients, especially patients with syphilis. The insurance societies maintain, furthermore, that it is not their task to treat a patient in order to prevent a manifestation of his sickness which may occur after long years when very likely he will belong to another society, if he is insured at all. With invalidity insurance having come into effect, the situation is very different because it is a whole state institution to which practically all the wage earners are subjected. The interest of invalidity insurance lies primarily in the proper treatment of syphilis. That is the point at which the consulting stations for venereal patients come into the scheme. They are conceived not as institutions for treatment of venereal patients but as organizations which shall supervise the efficiency and length of the treatment. The collaboration of invalidity insurance with the public health authorities is recommended. Thus the provision of treatment through the insurance system can be supplemented from the public funds. The stations would serve also to educate the public on the dangers of venereal diseases and to discover sources of venereal infections.

Congress of Slavic Physicians

The first Congress of Slavic Physicians was held in Warsaw, May 26-29. In Prague, in 1901, Drs. J. Semerad and M. Pesina interested some Polish and Jugoslav physicians in a so-called Union of Slavic Physicians. The Slavic committee, which was formed at that time, was handicapped by the contemporary political situation. After the World War most of the Slavic nations had attained political independence. Therefore, at meetings held in 1925 in Dubrovnik, in 1926 in Belgrade and finally in Prague, a solid foundation for the organization was laid. While the prewar activities of the committee had a considerable political flavor, at the Warsaw congress the political element did not appear. The union, it seems, has found its object entirely in the scientific and professional field. The attendance at the congress was imposing: 300 from Poland, sixty-eight from Czechoslovakia, forty from Jugoslavia, fifteen from Bulgaria; and some representatives of the Russian and Ukranian emigration. The soviet Russian physicians did not participate although an invitation was extended to them. The presiding officer of the congress was Prof. A. Gluzinski of Warsaw. The proceedings of the congress were divided into three sections. The first topic was infectious scleroma. This malady is almost entirely confined to Slavic countries. It appeared from the papers presented that the disease is on the increase and therefore intensification of research is indicated. The papers brought together a material that is unique in medical literature. The second topic was prophylactic measures against scarlet fever, which disease has had an important mortality in eastern Europe since the World War. At the third session of the congress, the form of public health administration best suited to Slavic countries was discussed. At this point the German system, which emphasizes police power, and the English system, which is concerned chiefly with the education of the individual, were compared and the Anglo-Saxon system was found more suited to Slavic nations than the German system. The next congress will be held in Prague in 1928 in connection with the sixth Congress of Czechoslovak Biologists and Physicians. The by-product of the Warsaw congress is the organization of the Federation of Slavic Dermatologists. The Union of Slavic Physicians now can be considered a permanent institution.

Public Health Association

Recently the Czechoslovak Public Health Association was reorganized into an active body. A similar organization was founded in 1896 in Prague. In 1902 the association was merged with another society which originated from the Prague Medical Faculty. The activities of this resultant society practically ceased with the outbreak of the World War and could not be revived immediately after the war. With normal conditions returning to the country the need was felt for a medium where the progress of public health could be followed and national policies in public health questions framed. For this purpose the old society has been revived. A new executive committee was given the task of remodeling the present statutes and by-laws according to modern needs. The statutes and by-laws of the American Public Health Association will be taken as a model. Dr. F. Prochazka, professor of social medicine at the Medical Faculty of Prague, was elected chairman of the association.

Lupus

The results of an investigation on the prevalence of lupus in Czechoslovakia have been published recently by Dr. H. Pelc of the state institute of public health. The material for the study has been collected on individual cards through the local health officers, who serve in Czechoslovakia an administrative unit of some 6,000 inhabitants. Because the health officers are under state control, their participation in the reporting was almost complete. On the whole, 1,611 cases of lupus have been reported for the whole country. This makes a rate of 11.5 cases per hundred thousand inhabitants. If the possible sources of inaccuracies are taken into consideration (mainly unrecognized cases and those which are unknown to the health officers on account of far distant place of residence) the actual number of cases in the whole country can be estimated at about 3,000, which would make a rate of about 25 per hundred thousand. In the study, the main epidemiologic characteristics of the disease were analyzed. The world's literature covering the subject has been reviewed and the striking fact revealed that the low incidence of this

malady in the United States and England cannot be explained on the basis of the evidence now available. The United States is recommended as a ground for the study of the racial factors that might be involved because there is no other place in the world where more ideal conditions for a similar study could be obtained.

Nonnenbruch Called to Prague

Prof. E. Nonnenbruch has been called to the chair of internal medicine at the Prague German Medical Faculty. This is one of the most important chairs in the faculty, owing to the high reputation which it has attained through the work of Professor Jaksch-Wartenhorst, who is retiring from his position as chief of clinic. Professor Nonnenbruch comes from Germany and has been, up to the present time, the chief of the municipal hospital in Frankfort.

BERLIN

(From Our Regular Correspondent)

July 2, 1927.

The Excess Mortality of Men over Women in the Older Age Groups

Professor Silbergleit has found that, for Germany, the probability of a male stillbirth is 0.0342, and of a female stillbirth is 0.0294, or, in other words, that the probability that a male child will be born dead is 16.7 per cent, or one sixth, greater than for a female child. Whether this is due to the fact that the male fetus is larger, on the average, than the female fetus, only the biologist can decide. Utilizing the mortuary tables for 1910-1911, Silbergleit has found greater mortality of males, as compared with females, during early childhood and again in the 40-70 age groups. Although at certain periods of life females are exposed to greater hazards than their brothers of the same age group, the effects on the general average are only slight. The excess mortality of males during the first year of life amounts to 18.6 per cent of the mortality for females. In the second year of life, the excess mortality drops to 4.2 per cent, and in the 10-15 age groups the death rate is 7.1 per cent less than that of the corresponding groups of females, and almost the identical observation is made for the 25-35 age groups. In males of the three decades 40-70 the excess mortality is 32.9, 37.7 and 18.5 per cent, respectively, because of the greater hazards incurred by males with respect to tuberculosis, pneumonia, diseases of the respiratory organs in general; diseases of the digestive apparatus, the organs of circulation, and the urinary organs; diseases due to alcoholism; accidents, and suicide. The mortality for persons living in wedlock was considerably lower in the 30-70 age groups than for single persons and for the widowed and divorced, but this advantage was much more marked in men than in women.

Increase of Mental Disease in the Rhine Province

The number of mentally ill patients, idiots and epileptics being cared for by the Rheinische Landesfürsorgeverband has increased from 13,098, as of April 1, 1925, to 14,407, as of March 31, 1926. This makes an increase of 1,309 patients as compared with an increase of 879 in the fiscal year 1924-1925 and of 726 in the fiscal year 1923-1924.

The Cause of Last Year's Typhoid Epidemic in Hanover

Experts were not agreed as to the cause of the typhoid epidemic which broke out in Hanover last fall and which, in a population of 420,000, resulted in 2,423 cases and 282 deaths. The subject came up for discussion, recently, at a meeting of the Berliner Medizinische Gesellschaft.

Martin Hahn, professor of hygiene, of Berlin, pointed out that, whereas the morbidity figures for men and women in the 1-50 age groups were practically identical, in persons more than 50 years of age women predominated. He thought that the lower morbidity in men over 50 might be due to the fact that many of them were inoculated against typhoid during the war. The typhoid epidemic was preceded, from August 20 to 25, by mild intestinal disorders, which affected from 30,000 to 40,000 persons, in whom neither typhoid nor paratyphoid bacilli were found. Similar manifestations (so-called water sickness) have preceded typhoid epidemics in other localities (America). In Hanover, the water supplied by the Ricklinger water works had become contaminated. The water tasted of phenol (carbolic acid) and the bacterial count had increased, from 10, to 50 per 5,000 liters of water. The epidemic developed suddenly. Numerous secondary or contact infections followed later. In view of the rapid progress of the epidemic, the infective material must have been carried to all the early victims at about the same time. Ruling out other possible sources of infection, only the water remained. It is a difficult matter to find typhoid bacilli in the water, nor were they found in this instance. No strictly logical proof for the water-borne infection can be adduced, but there is considerable indicative evidence. The first cases developed in districts to which water from the Ricklinger works was supplied, and the population that was supplied by the Ricklinger works was relatively the hardest hit. The water from these water-works was below standard, for not only surface water but also river water had been admixed. The possibility of contamination by unfiltered river water was also proved by experiments. That the river water was contaminated with typhoid bacilli became at least very probable from the fact that, above Hanover, on the Leine, there were towns in which numerous cases of typhoid had occurred and which emptied their sewage into the Leine without processing. Since 1925, the water supplied by the Ricklinger works has been chlorinated. The chlorination, however, has not been adequate, because of the tendency to add as little chlorine as possible, and because, owing to the entrance of organic substances, the chlorine had entered into combination, to a great extent, so that there was not sufficient free chlorine to kill the bacilli. Hahn has therefore worked out a method that makes it possible for any one, though not a chemist, to determine whether or not water contains a sufficient amount of chlorine.

Professor Jürgens, who is connected with the Urban Hospital and who was active in Hanover during the epidemic, expressed his doubts as to water infection having been the cause of the epidemic. He sought to prove that the epidemic developed gradually and that the fact that so many persons were taken ill in a short time was due to individual circumstances. Jürgens is of the opinion that we know nothing at all about the causes of the epidemic. In combating typhoid, greater stress must be placed on prophylaxis, and there must be better cooperation between health officers and practicing physicians. At present, some health officers seem to regard the combating of typhoid as a final end in itself and thus are inclined to neglect the treatment of patients. In Hanover, the contagion psychosis caused more economic damage than the epidemic itself.

Whereas Professor Neufeld of the Institute for Infectious Diseases agreed absolutely with Professor Hahn, and emphasized that infections develop only through gross negligence and uncleanliness, which pointed to the need of launching educational campaigns among the school children, Professor Friedberger of the Institut für Immunitätsforschung und Hygiene in Dahlem expressed the belief that typhoid never develops suddenly but matures gradually, and, in the fall, when the conditions are favorable, leads to cases of illness. The most important causes are the social conditions. He referred, as cases in point, to the cholera epidemic in Hamburg and to the records of tuberculosis mortality, in both of which the poorer classes were chiefly affected.

Marriages

ARTHUR HOBART CONLEY to Miss Josephine Marie Hay, both of Chicago, July 20, at Montreal, Que., Canada.

ISAAC LONG HARSHBARGER, Rochester, Minn., to Miss Gertrude Ackerman of Mankato, June 30.

EDWARD S. MURPHY, Glendive, Mont., to Miss Edith E. Bartsch of Brainerd, Minn., June 15.

FLOYD VICTOR EFFERDING, Dubuque, Iowa, to Miss Eleanor Wivagg of Glencoe, Ill., August 2.

CHARLES SPIVA to Miss Sadie Genesky, both of New Bedford, Mass., June 19.

GUSTAV EDLUND, JR., to Miss Helen V. Loberg, both of St. Paul, in June.

EDWARD A. REGNER to Miss Mary C. Hoy, both of Minneapolis, June 15.

WILLIAM GORDON to Miss Lillian Goldstein, both of Philadelphia, June 28.

ROBERT W. ELWORTHY to Miss Florence Hediger, both of Chicago, June 9.

POL CORYLLOS to Miss Lois A. Ralli, both of New York, July 23.

Deaths

J. Orley Stranahan ✠ Fort Lauderdale, Fla.; Syracuse (N. Y.) University College of Medicine, 1896; member of the Associated Anesthetists of the United States and Canada; Spanish-American War veteran; formerly president of the board of health and board of education of Rome, N. Y.; at one time part owner and chief of the medical staff of the Rome Infirmary; on the staff of the Memorial Hospital; aged 55; died, July 9, at Richmond, Va., following an operation.

Thomas Edwin Wright, Monroe, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1909; member of the Louisiana State Medical Association; formerly sanitary inspector, state board of health, New Orleans; on the staff of St. Francis' Sanitarium; aged 51; died, July 5, of heart disease.

Malcolm Montgomery Crocker, Lordsburg, N. M.; Rush Medical College, Chicago, 1887; member of the New Mexico Medical Society; county health officer; served during the World War; on the staffs of the De Moss and Lordsburg hospitals; aged 63; died, May 17, of perforated duodenal ulcer.

Joseph Leon Gunter, Albany, Ala.; Memphis Hospital Medical College, 1894; member of the Medical Association of the State of Alabama; formerly secretary of the Morgan County Medical Society; on the staff of the Benevolent Society Hospital; aged 55; died, July 5, of cerebral hemorrhage.

Ernest Lee Dameron, Star, N. C.; North Carolina Medical College, Charlotte, 1911; member of the Medical Society of the State of North Carolina; served in France during the World War; aged 43; was killed, July 9, when the automobile in which he was driving was struck by a train.

George Washington Stewart, Philadelphia; Hahnemann Medical College of Philadelphia, 1883; formerly professor of the history of medicine at his alma mater; one of the founders and at one time on the staff of St. Luke's Hospital; aged 65; died, July 13, of intestinal obstruction.

Jacob S. Wheeler, Prosperity, S. C.; Medical Department of the Tulane University of Louisiana, New Orleans, 1898; member of the South Carolina Medical Association; member of the school board, and for many years mayor of Prosperity; aged 54; died, July 8, of cardiorenal disease.

Francis Thomas Duffy, Troy, N. Y.; Albany Medical College, 1915; member of the Medical Society of the State of New York; on the staff of the Troy Hospital; served during the World War; aged 33; died, July 18, at a local hospital, following an operation for appendicitis.

Samplet Edgar Webb, Draper, N. C.; University of North Carolina School of Medicine, Chapel Hill, 1908; member of the Medical Society of the State of North Carolina and Medical Society of Virginia; aged 48; died, July 7, of a bullet wound, presumably self-inflicted.

John Hill Holbrook, Sulphur Springs, Texas; University of Louisville (Ky.) School of Medicine, 1898; member of the State Medical Association of Texas; aged 56; died, July 7, at the Baylor Hospital, Dallas, following an operation for carcinoma of the pancreas.

Leander H. Morphew, Stuttgart, Ark.; Keokuk (Iowa) Medical College, 1891; member of the Arkansas Medical Society; formerly mayor, and member of the city council; at one time president of the school board; aged 68; died, June 16, of heart disease.

Frank D. Carson, Holmesville, Ohio; Western Reserve University School of Medicine, Cleveland, 1885; member of the Ohio State Medical Association; past president of the Holmes County Medical Society; aged 68; died, June 30, of heart disease.

Mortimer Gilbert Burford ✠ Brooklyn; Columbia University College of Physicians and Surgeons, New York, 1903; aged 50; died suddenly, July 16, at the Carson C. Peck Memorial Hospital, of chronic myocarditis and coronary sclerosis.

Samuel Clifford Cox, Fort Bayard, N. M.; George Washington University Medical School, Washington, D. C., 1892; served in the U. S. Veterans' Bureau; veteran of the Spanish-American and World wars; aged 59; died, July 9, of heart disease.

Walter Harry Waterbury, Dolgeville, N. Y.; Albany Medical College, 1909; member of the Medical Society of the State of New York; aged 41; died, June 11, at the Memorial Hospital, Utica, of acute nephritis and arteriosclerosis.

George Waverley Clark, San Francisco; University of California Medical School, San Francisco, 1894; aged 62; died, June 13, at the U. S. Marine Hospital, number 19, of hypostatic pneumonia and cerebral hemorrhage.

Adalbert B. Berk ✠ New York; University of Vienna, Austria, 1887; formerly on the staff of the Mount Sinai Hospital; aged 62; died, July 18, at San Francisco, of coronary sclerosis and valvular heart disease.

Frederic Waldo Whitney, New York; Dartmouth Medical School, Hanover, 1882; aged 73; died, May 17, at the Bellevue Hospital, following a fracture of the thigh received when knocked over by escaping thieves.

Francis Wharton Blake ✠ Gambier, Ohio; Columbus Medical College, 1883; secretary and past president of the Knox County Medical Society; aged 68; died, in May, at a hospital in Mount Vernon, of pneumonia.

Asa Norman Jones, Reedsburg, Wis.; Rush Medical College, Chicago, 1890; member of the State Medical Society of Wisconsin; aged 63; died, May 13, at a local hospital, of cholecystitis and pancreatitis.

Ernest Victor Gustuson ✠ Fargo, N. D.; Chicago College of Medicine and Surgery, 1909; on the staff of St. Luke's Hospital; aged 48; died, July 13, at Fair Hills, Minn., of cerebral hemorrhage.

Wallace Nelson Shaw ✠ Freeport, Texas; University of the South Medical Department, Sewanee, 1894; served during the World War; aged 54; died, March 29, at St. Joseph's Infirmary, Houston.

Bernard Patrick Quain ✠ Oswego, N. Y.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1904; on the staff of the Oswego Hospital; aged 54; died, July 7, of lobar pneumonia.

Camillus P. Carrico, Elkton, Md.; University of Maryland School of Medicine, Baltimore, 1898; member of the Medical and Chirurgical Faculty of Maryland; aged 60; died, July 8, of heart disease.

Frank Osburn Risher, Shell Lake, Wis.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1906; aged 47; died, in July, at the Island City Hospital, Cumberland, of heart disease.

Allen Scott Hollingsworth, Goshen, Ind.; Eclectic Medical Institute, Cincinnati, 1887; member of the Indiana State Medical Association; aged 63; died suddenly, July 10, of heart disease.

Charles F. Chandler, Philadelphia; Medico-Chirurgical College of Philadelphia, 1891; member of the Medical Society of the State of Pennsylvania; aged 57; died, July 12, of heart disease.

Norman W. Hollenbeck, Milwaukee; Wisconsin College of Physicians and Surgeons, Milwaukee, 1904; member of the State Medical Society of Wisconsin; aged 52; hanged himself, June 23.

Samuel Marion France, Midvale, Ohio; Eclectic Medical Institute, Cincinnati, 1894; member of the Ohio State Medical Association; aged 68; was drowned, in Lake Erie, July 13,

Roy J. Pelton, Detroit; University of Michigan Homeopathic Medical School, Ann Arbor, 1902; aged 49; died, in July, at his summer home in Deer Lake, Mich., of cerebral hemorrhage.

Samuel U. Harshberger, Port Matilda, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1882; aged 76; died, July 4, at a hospital in Philipsburg, following an operation.

Felix Villamil, Florida, N. Y.; University of Maryland School of Medicine, Baltimore, 1903; member of the Medical Society of the State of New York; aged 50; died, in July.

William S. Anderson, Wilson, N. C. (licensed, North Carolina, 1885); member of the Medical Society of the State of North Carolina; aged 82; died, July 4, of chronic myocarditis.

James Marion Dillon ✠ Alhambra, Calif.; St. Louis University School of Medicine, 1906; on the staff of the Alhambra Hospital; aged 52; died, June 28, of heart disease.

James Louis Proudfoot, Athens, Tenn.; College of Physicians and Surgeons, Keokuk, 1879; member of the Tennessee State Medical Association; aged 69; died, June 26.

Benjamin C. Stewart ✠ Opp, Ala.; University of Alabama School of Medicine, Tuscaloosa, 1900; formerly mayor of Opp; aged 51; died, June 19, of angina pectoris.

Frank B. Hawkins, Shelbyville, Ky.; Louisville National Medical College, Medical Department State University, Louisville, 1906; aged 57; died, July 4.

Charles Morgan Woolley, Sopchoppy, Fla.; University of Alabama School of Medicine, Tuscaloosa, 1893; also a druggist; aged 55; died suddenly, May 30.

Hugo Blum ✠ New York; Columbia University College of Physicians and Surgeons, New York, 1909; aged 41; died, July 17, of carcinoma of the intestine.

James Robert Davis, Silver City, N. M.; Northwestern University Medical School, Chicago, 1912; served during the World War; aged 42; died, July 15.

George Ethel Johnson, Dayton, Tenn.; Memphis Hospital Medical College, 1911; aged 42; died, June 8, of injuries received in an automobile accident.

Chester Emerson Campbell ✠ Niagara Falls, N. Y.; Ohio Medical University, Columbus, 1898; aged 74; died, July 21, of progressive muscular atrophy.

Elmer Allen Leisure ✠ Slater, Mo.; Chicago College of Medicine and Surgery, 1913; served during the World War; aged 45; died suddenly, July 2.

Joseph William Weis, Manchester, Ill.; Hahnemann Medical College and Hospital, Chicago, 1872; aged 77; died, July 3, of cerebral hemorrhage.

George S. Roach, Ludowici, Ga.; University of Georgia Medical Department, Augusta, 1900; aged 71; died, June 5, at a hospital in Savannah.

James Thomas Dixon ✠ Owensboro, Ky.; Missouri Medical College, St. Louis, 1894; aged 56; died suddenly, July 15, of cerebral hemorrhage.

Harry C. Hunzelman ✠ Woodward, Iowa; State University of Iowa College of Medicine, Iowa City, 1921; aged 33; died, July 8, of pneumonia.

Climena Serviss, Chicago; Hahnemann Medical College and Hospital, Chicago, 1896; aged 73; died, July 2, of chronic myocarditis.

John Rossman, Schenectady, N. Y.; Philadelphia University of Medicine and Surgery, 1868; aged 80; died, June 24, of angina pectoris.

Willis Linn ✠ Rochester, N. Y.; University of Maryland School of Medicine, Baltimore, 1911; aged 38; died, April 29, at Garrison, Ky.

William P. Ford, Boonville, Ind.; University of Louisville (Ky.) School of Medicine, 1894; aged 67; died, July 6, of angina pectoris.

Wilfred Le Roy Huffman, Elkhart, Ind.; Detroit College of Medicine and Surgery, 1903; aged 47; died, July 5, at Los Angeles.

James Henry Abrams, Atwood, Ill.; Rush Medical College, Chicago, 1878; aged 77; died, July 2, of cerebral hemorrhage.

John Edward Buchanan, West Alexander, Pa.; Baltimore Medical College, 1905; aged 46; died, June 20, of myocarditis.

George Boehm ✠ Marienville, Pa.; University of Pittsburgh School of Medicine, 1901; aged 54; died, July 6.

Edwin C. Thomas, Indianapolis; Indiana Medical College, Indianapolis, 1878; aged 70; died, July 3.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

J. M. HARRIS — QUACK

A "Cancer Cure" Faker in the Toils

James M. Harris of Tulsa, Oklahoma, has for some years been quacking it in the "cancer cure" line. His particular fake he calls "Radium Oil." He operates not in the city of Tulsa but on a farm about two miles in the country. He is reported to do a large business.

The Supreme Court of Oklahoma has recently affirmed the judgment of the trial court that had awarded a woman $10,000 damages because Harris had treated what, at the outset, was an operable case of cancer of the breast and allowed the matter to progress until it became inoperable.

The victim was one Mary A. Graham, described by the Supreme Court as a plain country woman of limited intelligence, about 62 years of age. Mrs. Graham went to quack Harris in October, 1922, because she was afflicted with what she believed to be a cancerous growth of the breast. James M. Harris, at that time and for some time before, had held himself out as a physician and surgeon who was able to treat and cure cancer. Harris diagnosed the case by rubbing the fingers of his left hand along the woman's arm, and then informed her that she did not have cancer but that she had a growth that would develop into cancer if it was left alone and she also had kidney trouble. He persuaded the woman to purchase two sixteen-ounce bottles filled with a reddish fluid, which Harris called "Oil of Radium." Mrs. Graham paid the quack $125 for the two bottles of medicine, the contents of one bottle of which were to be rubbed on the growth and two teaspoonfuls daily of the other bottle to be taken internally.

When Mrs. Graham came back three weeks later, Harris informed her that the "growth" had developed into a cancer and offered to furnish her with more of the "Oil of Radium" of a "higher specific," that would cost her $45. He told her, however, if she would wait a month, he would furnish it for nothing. Mrs. Graham returned in about a month, but the quack would not even give her any attention, although his secretary gave the poor woman a bottle of medicine and advised her to come back in about a week, which she did. On this visit Harris told Mrs. Graham that she was doing all right but must have more medicine, for which he demanded a check for $45. She gave the quack a check but her husband refused to allow the bank to honor it, with the result that James M. Harris came to see the woman, used profane language, said that the government was backing him, and that he was worth $50,000 and would spend all of it before he would allow Graham to stop payment on the check.

Then in May, 1923, Mrs. Graham brought suit against Harris for $10,000 damages on the grounds that Harris' statements and claims were false and fraudulent and made with the design to cheat and defraud her and to obtain money from her without any consideration; that Harris was not a physician or surgeon; that he had no experience, knowledge or skill in the practice of medicine; that by reason of his acts, on which she had relied, he had caused her to neglect proper medical attention with the result that her disease grew worse until it was too late to obtain a cure.

The case came to trial in April, 1924, and the jury awarded the woman $7,500 actual damages and $2,500 exemplary damages; the court rendered judgment accordingly. Mrs. Graham died of cancer in October, 1925.

Quack Harris appealed the case but the Supreme Court held that the judgment of the trial court should be affirmed. The quack then petitioned for a rehearing. On April 12, 1927, the Supreme Court of the state denied it.

Meanwhile this bird of prey still continues his vulture-like activities.

Correspondence

IODINE IN GOITER PROPHYLAXIS

To the Editor:—In THE JOURNAL, June 4, page 1829, is a communication from your Berlin correspondent on "Iodine in Combating Goiter." In the article a report is given of the results of the researches of Frau Professor von Wrangel, and the statement is made that these researches had established that it is impossible by means of the addition of iodine to the soil to increase to any considerable extent the iodine content of plants grown therein, and that consequently also the iodine contained in the sodium nitrate brought from Chile does not have any influence in combating goiter disease and does not play any part with reference to the marked increase of the disease in Germany since the war.

An article on trials with iodine fertilization, which were carried out at the Landwirtschaftliche Hochschule (agricultural college), Weihenstephan, has unequivocally established that it is possible by means of suitable iodine fertilization to increase up to twenty fold the original iodine content in the most important food plants (grains, clover species, fodder grasses, sugar beets and fodder beets). Thus the way is opened by which iodine in an easily assimilable form may be introduced into the animal and human organism, in which, owing to lack of iodine, disease symptoms such as goiter and cretinism develop. By other investigators as well, iodine fertilization experiments have been carried out with the same result as in Weihenstephan.

KOMITEE FÜR CHILESALPETER IN BERLIN,
Berlin-Charlottenburg.

THALLIUM ACETATE FOR EPILATION

To the Editor:—In THE JOURNAL, July 2, a physician asks whether thallium acetate, 8 grains to the ounce of cold cream, would cause epilation locally or generally. I have tried thallium acetate by daily inunction for a period of two weeks in strengths up to 10 per cent on four individuals without observing any result whatever either at the time or later.

H. O. BAMES, M.D., Los Angeles.

SUICIDE IN CALIFORNIA

To the Editor:—In THE JOURNAL, July 9, H. A. D. of Buffalo asks the reason for the high suicide rate of cities in California. A partial reply was made by Mr. L. E. Ross of the California State Board of Health. In my opinion the most potent cause is the antiquated laws existing in California in regard to the committment of the mentally sick to state hospitals. The law requires that in order that a patient may receive treatment in a state hospital the complaining witness must make affidavit that the patient is "so far disordered in his mind as to endanger health, person or property." The patient is placed under arrest by police or sheriff; held under observation (in some places in the county jail) for at least twenty-four hours; tried in open court, and if adjudged insane by a judge of the superior court is turned over to the sheriff, together with warrant of arrest, and other papers, and conducted to a state hospital.

Naturally, relatives of the mentally sick hesitate to subject the patient to the indignity of such a proceeding. Furthermore, many judges insist on a literal interpretation of the law and refuse to commit patients unless they have demonstrated the fact that they are dangerous. Consequently, every city in California has large numbers of the mentally ill who cannot be given care and treatment until they have committed or attempted to commit a crime. In some cities the police have lists of the potentially dangerous "insane." I myself have known of at least half a dozen cases in the last year in which mentally depressed persons in San Francisco have taken their lives. One woman, recognized by her husband, the landlord, the police and social workers to be mentally deranged, took her own life and that of her five children.

The sheriffs of California who derive a large revenue from the handling of the mentally sick are well organized and have so far been successful in frustrating all attempts to change the law.

EVA CHARLOTTE REID, M.D., San Francisco.
Chief of Psychiatric Clinic, University of California Hospital.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address but these will be omitted, on request.

FORMULA FOR HAND LOTION

To the Editor:—Please give me a formula for a hand lotion for my personal use. I have used Hind's honey and almond cream with the most satisfactory results of any lotion that I have found. My hands become dry, cracked and brittle from frequent scrubbing in the surgery, and sunburn, which condition I had not noticed before. Please do not publish my name.

M.D., New York.

ANSWER.—The following, recommended by William Allen Pusey, makes an excellent hand lotion and is cheap. The directions sound complicated, but it is easy to make after one gets the knack. It is important to follow directions. Of course it is as easy to make a pint or a quart, but it should always be made in a bottle about twice the size of the quantity of lotion being made.

Place in a wide mouth gallon bottle:

Liquid petrolatum	½ pint
Oil of bergamot	15 drops
Oil of lavender	15 drops

Coat the entire inside of bottle and cork with the foregoing by rolling the bottle round until the liquid petrolatum has come in contact with the entire inner surface. Then add:

Powdered tragacanth	1 ounce
Sodium benzoate	2 drams

Shake thoroughly, then add water a pint at a time until the quantities make up to one-half gallon. After each addition of a pint of water shake very thoroughly.

TREATMENT OF SPEECH DIFFICULTY

To the Editor:—My daughter has a speech disorder in which there is an inability to release certain words. She has no trouble in singing but is unable to speak fluently. I believe the cause of her trouble is distinctly mental and does not lie in any defective formation of her vocal organs, but rather is a lack of coordination between the brain and the muscles of speech. Will you kindly outline a plan of treatment? She is past 25 years of age, and her general health is fairly good. Please omit name.

M.D., California.

ANSWER.—From the standpoint of treatment, the problem of the individual stammerer should be estimated at any particular period of his life on the basis of: (1) the underlying constitutional tendencies to emotional and nervous instability; (2) the number of years that have served to fix and intensify the psychologic and peripheral disturbances; (3) environmental conditions and the manner of reaction of the stammerer to them; (4) the general health, and (5) the general intelligence and education.

Difficulties of eradication increase markedly with the years. This is due to the almost constant state of fear, depression and struggle in attempting to meet the requirements of the social life. Between the eighth and sixteenth years the psychologic factors especially gradually become greatly intensified and fixed in the mental life. Beyond the sixteenth year the more serious social and economic requirements of life itself are just ahead and the years of habit are telling more than ever. The problems of treatment are enormously more difficult at 20 and 25 years than earlier. Such is the rule; exceptions are not here under consideration. Occasionally, for example, a milder stammerer recovers gradually by his own efforts. The parent who drifts and waits for the spontaneous recovery of his child is usually destined to pay for his lack of intelligence. Treatment should be undertaken early.

With some exceptions, especially in the earliest years, one is confident, generally speaking, that no case will prove easy. Treatment necessarily is highly technical. A thorough understanding of the psychophysiology of speech production, and a knowledge of psychology especially applied to the mental disturbances of the stammerer, are required. Each case must be worked on as an individual psychophysiologic problem in self-control. Recovery follows adequate treatment (where full cooperation can be obtained) in a high percentage of the cases.

An attempt to outline a plan of home treatment for a stammerer 25 years of age, concerning whom individually one knows almost nothing, would be utterly unwarranted. This is not because stammerers at 25 cannot recover. It is because the problem is difficult and because success demands all the knowledge of the patient obtainable and because personal contact of the physician with the patient is practically always necessary.

Samuel D. Robbins has recently published an intelligent, practical little book, called "Stammering and Its Treatment," which aims at helping the stammerer himself. It would be of service to our correspondent and to others seeking similar knowledge.

GRAPEFRUIT INFUSIONS

To the Editor:—The use of a cold water infusion of whole grapefruit (including peel and pulp) for a variety of conditions seems to be quite in vogue here on the Pacific Coast. The multiplicity of conditions for which it is used suggests that the idea originated in one of our numerous schools of quacks. Has anything appeared in recent literature on the subject?

M.D., California.

ANSWER.—This seems to be one of the fads of Frank McCoy, who dispenses so much dietetic information that isn't so. According to McCoy, grapefruit "contains organic quinine," which, he declares, has "a quicker effect than the inorganic form of quinine used in tablet form." Some day, McCoy may catch up with the rest of the world and learn that quinine is an organic, and not an inorganic, substance. According to McCoy, this infusion of grapefruit is "valuable in its action upon the liver and gallbladder in the elimination of gallstones." The same "authority" declares that grapefruit "should never be used with the regular meal" and "under no circumstances should grapefruit . . . be taken preceding a meal or any closer than two hours before eating." Few men have a larger fund of dietetic misinformation than that possessed by Frank McCoy.

APPARATUS FOR KAHN TEST

To the Editor:—Where can we get a complete set for Kahn's precipitation test? Please omit name.

M.D., Colorado.

Answer.—To our knowledge, no firm supplies complete sets for the Kahn test. (The U. S. Navy supplies such sets for use within the organization.) Standard Kahn antigen ready for use is supplied by the Michigan Department of Health, Lansing, and by practically all biologic supply houses (such as Parke-Davis and the Digestive Ferments Co., Detroit). Glassware and apparatus are obtainable from the leading laboratory supply houses (such as Glasco Products, 504 South Green Street, Chicago; Arthur H. Thomas, Philadelphia). The technic of the test is fully described in Kahn's "Serum Diagnosis of Syphilis by Precipitation," published by the Williams and Wilkins Company, Baltimore.

POSSIBLE TUBERCULOUS CYSTITIS

To the Editor:—My son has tenesmus of the bladder. There is considerable pus in the urine, and the cystoscope shows inflamed membranes. The tenesmus extends to or principally affects the prostatic portion of urethra. It is brought on by urinating, and is rendered unbearable by irrigation or passing a sound. I have been administering scopolamine hydrobromide, 1/100 grain (0.6 mg.) at night for six months. Methenamine in fair doses is given. He suffers intensely. I have given morphine, but all has been withdrawn except one-eighth grain (8 mg.) at night. He drinks milk and water sufficient to render the urine clear. The right kidney was removed two years ago for hypernephroma. He had tuberculous glands as a child and reacts to tuberculin. He has always been well nourished until the last six months, and is gaining flesh now. He is 35 years of age. He has never had genito-urinary disease of any kind. His appetite is fair to good. Can you suggest anything? Is the scopolamine hydrobromide capable of doing harm? Please omit name.

M.D., Kansas.

ANSWER.—The symptoms reported suggest the presence of a tuberculous cystitis. One of the best anodynes in such instances is iodoform. It is best applied in a 10 per cent emulsion prepared with olive oil. Every other day about 30 cc. of this preparation is injected through a capillary catheter into the previously emptied bladder. Starting from the supposition of a tuberculous process, deep roentgenotherapy suggests itself. The treatments should be applied in turn perineally and suprapubically. A moderate voltage as a rule has a very soothing effect. If everything fails, cystostomy or nephrostomy must be tried. The therapeutic efforts mentioned may also have some palliative effect in case the trouble should be metastatic.

PROTEIN THERAPY IN POSTPARTUM INFECTION

To the Editor:—During the past six months I have been responsible for some difficult maternity cases—difficult for the mother and also for the physician. Many have been cases of posterior position, and during this time I have made myself familiar with the Kielland forceps, so that now as far as delivery is concerned I do not have much trouble. However, in spite of the best technic I can command, in a hospital, with trained and registered nurses, there are some cases in which there is a morbid temperature—from 103 to 104 F. In the treatment of this condition, apart from icebags and ergot, I am firmly of the opinion that injections of 20 cc. of sterilized skim milk, not more than three injections in any one case, have been of decided therapeutic value and have shortened the convalescence and brought the patient to normal in the least possible time. Now, I do not understand the theory or how this is accomplished, and I would be glad if you would answer this query through the columns of THE JOURNAL.

M.D., Saskatchewan.

ANSWER.—Both the normal and the abnormal activity of the cells of the body depend on external stimuli. When certain stimuli—bacterial, toxic, thermic, traumatic or chemical—produce disease they do so by decreasing the activity of the cells. The cells in turn react with defensive measures against these stimuli, and there is what is known as the acute stage of a disease. In the subacute stage, the cells still make a strong effort to overcome the noxious stimuli. When the chronic stage is reached, the cells are beginning to lose ground. At this stage, however, provided the cells are not completely exhausted, they may recover their normal function if they receive certain beneficial stimuli.

Proteins belong to this category of beneficial stimuli, for they have the power of restoring partly injured cells to normal activity. Stated in another way, proteins, just like many other nonspecific substances, can cure infectious diseases even though these substances do not bear any relation to the infections which are to be treated. These nonspecific substances must be given subcutaneously, intramuscularly or intravenously to produce their effect. Many proteins have been used for this purpose: egg albumin, normal blood, peptones, casein, colloidal metals; but milk is the one most commonly used.

It must be borne in mind, however, that protein therapy is not a panacea and it should not be used as a routine. Its use must depend on the intensity of the infection to be treated, its duration, and the resistance of the patient. It should never be used in cases of diabetes or cardiac decompensation, when there is hypersensitiveness manifested as asthma, urticaria, serum sickness or angioneurotic edema, or when the patient's nervous system is unstable.

CIRRHOSIS OF THE LIVER—TORPID LIVER

To the Editor:—1. Is there any recent treatment for portal cirrhosis of the liver in its earliest stages? Are mixed vaccines of the streptococcus-staphylococcus colon type of possible value? 2. Is there any scientific basis for the lay belief in hepatic insufficiency independent of organic lesions described as a "torpid liver," and can this condition be successfully treated by diet, medicinally or by exercise?

J. S. L.

ANSWER.—1. The treatment for portal cirrhosis of the liver in its early stages is one of rectifying the patient's mode of life and personal hygiene. Alcohol should be prohibited and the bowels well regulated with saline laxatives. Diet should be simple and free from highly seasoned foods. The spa treatment has been recommended, and it is especially serviceable in establishing new wholesome habits of diet and hygiene. If syphilis is coexistent, arsphenamine and mercury should be employed. Mixed vaccines do not have at present a scientific basis for their administration.

2. The term "torpid liver" does not have a scientific basis because functional tests made in this condition do not show evidence of hepatic insufficiency. Most patients who complain of this disturbance usually lead a sedentary life and suffer from constipation, and it should be successfully treated by mild saline laxatives and by exercise, and most of all encouragement to the patient.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Detroit, Sept. 12. Sec., Dr. W. H. Wilder, 122 S. Michigan Blvd., Chicago.

ALASKA: Juneau, Sept. 6. Sec., Dr. Harry C. DeVighne, Juneau.

NATIONAL BOARD OF MEDICAL EXAMINERS, Parts I and II., Sept. 14-16. Applications should be made by August 10. Sec., Dr. John S. Rodman, 1600 Walnut Street, Philadelphia.

NEW HAMPSHIRE: Concord, Sept. 8-9. Sec., Dr. Charles Duncan, Concord.

OKLAHOMA: Oklahoma City, Sept. 13-14. Sec., Dr. J. M. Byrum, Shawnee.

PORTO RICO: San Juan, Sept. 6. Sec., Dr. D. D. Biascoechea, Box 804, San Juan.

HOSPITALS RECENTLY APPROVED FOR RESIDENCIES IN SPECIALTIES

Since the publication of the list of hospitals approved for residencies in specialties in THE JOURNAL, March 12, fifteen additional hospitals have been approved by the Council on Medical Education and Hospitals. Their names and locations are as follows:

Gorgas Hospital, Birmingham, Ala.
Municipal Contagious Disease Hospital, Chicago.
Henry Ford Hospital, Detroit.
Harlem Hospital, New York.
Woman's Hospital, New York.
Children's Hospital, Cincinnati.
Babies' and Children's Hospital, Cleveland.
Memphis General Hospital, Memphis, Tenn.
Pine Breeze Sanitarium, Chattanooga, Tenn.
St. Joseph's Hospital, Baltimore.
Brooklyn Eye and Ear Hospital, Brooklyn.
Long Island Hospital, Long Island, Mass.
Jewish Hospital of St. Louis, St. Louis.
Memphis Eye, Ear, Nose and Throat Hospital, Memphis, Tenn.
Children's Hospital of Pittsburgh, Pittsburgh.

Texas 1926 Reciprocity Report *

Dr. T. J. Crowe, secretary of the Texas Board of Medical Examiners, reports that 201 candidates, including 22 osteopaths and 1 undergraduate, were licensed as physicians and surgeons by reciprocity, and 3 candidates were licensed by endorsement of their credentials during 1926. The following colleges were represented:

LICENSED BY RECIPROCITY College	Year Grad.	Reciprocity with
Birmingham Medical College, Birmingham	(1902), (1908)	Alabama
Medical Department, University of Alabama	(1897)	Alabama
University of Alabama School of Medicine	(1909)	Mississippi
University of Arkansas School of Medicine (1901), (1903), (1912), (1915), (1924), (1926)		Arkansas
College of Medical Evangelists	(1924)	California
Denver and Gross College of Medicine	(1903)	Idaho
George Washington University Medical School	(1922)	Louisiana
Howard University School of Medicine	(1906)	Arkansas
National University Med. Dept., Washington, D. C.	(1896)	Mississippi
Atlanta College of Physicians and Surgeons (1905) Georgia	(1902)	Louisiana
Atlanta Medical College, Atlanta	(1915)	Georgia
Emory University School of Medicine	(1924)	Georgia
Chicago College of Medicine and Surgery (1917) Wyoming	(1909)	Illinois
General Medical College, Chicago	(1924)	Wisconsin
Hahnemann Medical College and Hospital, Chicago	(1903)	Louisiana
Northwestern University Medical School (1894), (1907), (1910), (1918), (1924) Illinois,	(1924)	Oklahoma
Rush Medical College	(1908) Oklahoma, (1923)	Illinois
University of Illinois College of Medicine	(1913)	Oklahoma
Indiana University School of Medicine	(1908)	Oklahoma
Medical College of Indiana, Indianapolis	(1896)	Illinois
Keokuk Medical College, Keokuk	(1902)	Iowa
State University of Iowa College of Medicine	(1908), (1915)	Iowa
College of Physicians and Surgeons, Kansas City	(1901)	Kansas
University of Kansas School of Medicine	(1907), (1925)	Kansas
Hospital College of Medicine, Louisville	(1897)	Kentucky
Kentucky School of Medicine	(1893) Oklahoma, (1906)	Indiana
University of Louisville School of Medicine (1906) Kansas, (1911) Louisiana, Mississippi, (1910) Colorado, (1912) Missouri, (1913), (1921), (1925) Kentucky	(1882)	California
Tulane University School of Medicine (1897, (1916), (1922), (1924, 3), (1925, 3) Louisiana, (1921) Arkansas, (1925) Alabama	(1887)	Oklahoma
College of Physicians and Surgeons, Baltimore	(1915)	W. Virginia
Johns Hopkins University School of Medicine	(1923)	Minnesota
University of Maryland School of Medicine (1925) Oklahoma	(1907)	Maryland
Harvard University	(1922) Virginia, (1924), (1925)	Mass.
University of Minnesota Medical School	(1921)	Minnesota
American Medical College	(1905)	Missouri
Barnes Medical College, St. Louis (1910) Alabama	(1906), (1911, 2)	Missouri
Central Medical College of St. Joseph (1900) Oklahoma	(1899)	Nebraska
Ensworth Med. College, St. Joseph	(1908) Kansas, (1914)	Missouri
Kansas City College of Medicine and Surgery	(1923)	Arkansas
Kansas City Med. College, Kansas City, Mo.	(1899) Missouri,	Oklahoma
Missouri Medical College, St. Louis	(1897)	Oklahoma
St. Louis College of Physicians and Surgeons (1893) Missouri, (1903) Colorado, (1910) Iowa	(1892)	Kansas
St. Louis University School of Medicine Missouri, Missouri	(1925)	Mississippi
University Medical College of Kansas City (1897), (1901), (1905, 2), (1912) Missouri, (1897), (1900), (1911) Oklahoma	(1913)	Kansas
Washington University School of Medicine (1920) Minnesota	(1902), (1912)	Missouri
John A. Creighton Medical College	(1901)	Nebraska
Lincoln Medical College, Eclectic	(1907)	Nebraska
Lincoln Medical College of Cotner University	(1910)	S. Dakota
University of Nebraska College of Medicine (1921), (1925) New Mexico	(1920)	Nebraska
Bellevue Hospital Medical College	(1887)	N. Dakota
Columbia University College of Phys. and Surgs.	(1923)	Georgia
Fordham University School of Medicine	(1917)	New York
North Carolina Medical College	(1913) N. Carolina, (1914)	S. Carolina
Eclectic Medical College, Cincinnati	(1910)	Kentucky
Laura Memorial Woman's Med. Coll., Cincinnati	(1902)	Indiana
Medical College of Ohio	(1907) Indiana, (1909)	Montana
Starling Medical College, Columbus	(1898)	Ohio
University of Cincinnati College of Medicine	(1910)	W. Virginia
University of Oklahoma School of Medicine (1914), (1916), (1917), (1925, 4), (1926, 3)	(1912),	Oklahoma
Jefferson Medical College of Philadelphia (1911) North Carolina, (1913) Arkansas, (1916) Kansas, Mississippi	(1909)	Oklahoma
University of Pennsylvania School of Medicine (1910, 2), (1920), (1925)		Penna.
Meharry Medical College	(1904) Tennessee, (1913)	Arkansas
Memphis Hospital Medical College (1899), (1900), (1904), (1912, 2) Louisiana, (1906), (1907) Oklahoma, (1903), (1913) Tennessee	(1903), (1904)	Arkansas
Nashville Medical College	(1892)	Arkansas
Sewanee Medical College, Sewanee	(1909)	W. Virginia
University of Nashville Medical Department	(1909)	Mississippi
University of Tennessee College of Medicine (1914), (1913), (1925, 2) Tennessee, (1908), (1916)	(1891)	Missouri
Vanderbilt University School of Medicine (1909), (1914), (1917), (1921), (1923), (1925), (1926, 2) Tennessee, (1914) Arkansas	(1892),	Oklahoma
University of Dallas Medical Department	(1902)	Oklahoma
Medical College of Virginia	(1920, 2)	Virginia
University of Koenigsberg, Germany	(1923)†	Missouri
Undergraduate		Tennessee
Osteopaths	California, Colorado,	Missouri, 20

ENDORSEMENT OF CREDENTIALS College	Year Grad.	Endorsement with
University of Nebraska College of Medicine	(1919)	Alaska
Jefferson Medical College of Philadelphia	(1925)	U. S. Navy
University of Texas School of Medicine	(1917)	U. S. Navy

* Supplementary to the statistics published in THE JOURNAL, April 30, 1927.

† Verification of graduation in process.

Book Notices

HISTORY OF MEDICAL PRACTICE IN ILLINOIS. Volume I—Preceding 1850. Issued by the Illinois State Medical Society in Commemoration of Its Diamond Jubilee. Compiled and Arranged by Lucius H. Zeuch, M.D., a Member of the Committee Appointed for this Task. Cloth. Price, $10 per set. (To be issued in 2 volumes.) Volume I. Pp. 713, with illustrations. Chicago: The Book Press, Inc., 1927.

The first volume of this history of medical practice in Illinois brings the subject down to 1850. A second volume, bringing the subject down to date, is now in preparation. The scope and extent of the work are shown by the table of contents:

Chapter 1. Prehistoric Illinois. (We can see no use for this chapter.)

Chapter 2. The period of the French explorers.

Chapter 3. The period of French influence and colonization.

Chapters 4 and 5. The early British colonies.

Chapter 6. The Illinois territory in the early nineteenth century.

Chapter 7. The physicians of St. Louis, the suburb of the American bottom in the early days. (A chapter logically included.)

Chapter 8. The centers of civilization on the Wabash, Ohio and Mississippi.

Chapter 9. Medicine in Chicago prior to 1836.

Chapter 10. Chicago from 1836 to 1850.

Chapter 11. Early homeopathy in Illinois.

Chapter 12. Medical pioneers of the interior of the state, southern section.

Chapter 13. The same for the central counties.

Chapter 14. The same for the northern counties.

Dr. Zeuch has brought together an invaluable treasure of early medical history. His interest is not confined to medical

affairs and the value of the book is much enhanced by the background of general early history that is included. Father Allouez, Marquette, LaSalle, the Chicago Portage, Cahokia, Kaskaskia, Fort De Chartres, Fort Massac, the American bottom with its mounds and its rich prehistoric material—about all of these there is interesting, vivid information. Indeed, the reviewer knows no other place where there is readily available more bits of knowledge concerning these interesting subjects. But these are incidental to the medical history of these places and times which the author has accumulated and recorded with no less industry and zeal. From the time of LaSalle down to 1850 the facts are provided about the physicians who enter into the medical history of the state. There is much valuable information about the diseases with which the pioneers had to contend, the epidemics, the insanitary conditions and all the details of practice of the time—not only the scientific details but also the material details which add color and interest to the recital. This is, historically, the most interesting part of the volume, but the chapters devoted to the history after the state was organized are full of information and will become increasingly useful as time goes on. The chapter on the early medical history of Chicago will be read with interest by those who are interested in its history. One gets a glimpse of many striking personalities.

The fidelity, the resourcefulness, the wide influence, the general usefulness of the old-time practitioners who played so large a part in the activities of their communities are repeatedly emphasized. Some heroes are rescued from complete oblivion; many of them might form the themes for stirring novels. An episode is recorded of Dr. Silas Hamilton, who had practiced in Natchez, Miss., and who came to Monroe County, Illinois, in 1830. He died in 1834, but before his death he liberated his twenty-eight slaves. One of these, George Washington Hamilton, prospered and lived until 1864, thirty years after his master. All this part of the story is commonplace, for the same thing happened many times; but there is one episode of it that speaks a volume for the negro and for his master. Before his death George Washington erected a monument—not a little marker but a handsome marble column 12 or 14 feet high—in honor of his old master, on which he inscribed the fact that he had erected this monument to the memory of his former master, Dr. Silas Hamilton. One would be glad to know much of this good master and of his grateful slave.

The book is generously illustrated. Some pictures which are imaginary are banal, but there are many interesting old reproductions: Kaskaskia, the ruins of Fort De Chartres, early Cairo, Prairie du Rocher, old Cahokia, surgical instruments, the ruins of Fort Massac, Cave-in-Rock, Nauvoo, the first Rush Medical College building, and so on. Several old maps add greatly to the value of the volume: Collot's map of the Illinois country for 1796, part of Thomas Hutchin's map of 1778, Harrison and Guion's map showing the early trails of Chicago. The illustrations and the maps alone would make the volume valuable and worth while.

With all of the copies of the oath of Hippocrates that are available for the frontispiece, the one used is illegible and bears the imprint of a proprietary medicine firm. There is almost no reference to the Society of Medical History of Chicago, or its *Bulletin* or collections, and there is almost no mention of the work of Dr. George H. Weaver, who, more than any one else preceding Dr. Zeuch, has dug up the facts of the early medical history of Illinois. In the index he is given as Dr. G. H. Weaver, then as Dr. G. H. Weaver of Chicago; on pages 645-626 there are two paragraphs referring to his valuable paper on early medical education in Illinois, but this time he is referred to as Dr. Geo. W. Weaver. No one can write the medical history of Illinois successfully without availing himself of Weaver's invaluable work, and in any volume on this subject he should have due credit. Certainly he should not have his name incorrectly written or in any way confused.

Any one with interest or pride in the medical history of Illinois should have this book. Dr. Zeuch is to be congratulated on his work in preparing it.

THE WOMAN A MAN MARRIES: An Analysis of Her Double Standard. By Victor Cox Pedersen, A.M., M.D., F.A.C.S. Cloth. Price, $3 net. Pp. 276. New York: George H. Doran Company, 1927.

In this volume a specialist in urology analyzes the reasons for failure in many modern marriages. Obviously the point of view of urologists in these matters is largely based on experience with persons whose marriages have failed for physical causes, including primarily impotence in the male, frigidity in the female, and venereal disease. As a result of his analysis, Dr. Pedersen is apparently convinced that the trend toward feminism is responsible largely for frigidity, that few women are willing to bear their share of the physical side of married life, and that the modern costume and habits of women lead to male seduction. The book is essentially a plea of equal rights for men in these matters. The cure for the diseases of modern civilization, particularly as they relate to marriage, is, according to Pedersen, a return to the family life in which the woman was essentially the keeper of the home, and an abolishment of prudery in childhood education. The views are interesting and must be taken seriously because based on much observation.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

MANUAL OF BACTERIOLOGY. By Robert Muir, M.A., M.D., Sc.D., Professor of Pathology, University of Glasgow, and the late James Ritchie, M.A., M.D., F.R.C.P. Revised by Carl H. Browning, M.D., D.P.H., Gardiner Professor of Bacteriology, University of Glasgow, and Thomas J. Mackie, M.D., D.P.H., Irvine Professor of Bacteriology, University of Edinburgh. Eighth edition. Cloth. Price, $4.75. Pp. 821, with 211 illustrations. New York: Oxford University Press, 1927.

Latest edition of well-established textbook in bacteriology.

MALARIAL PSYCHOSES AND NEUROSES: With Chapters Medico-Legal, and on History, Race Degeneration, Alcohol, and Surgery in Relation to Malaria. By William K. Anderson, M.D., F.R.F.P.S., Visiting Physician to the Eastern District Hospital, Duke Street, Glasgow. Cloth. Price, $13. Pp. 395, with 18 illustrations. New York: Oxford University Press, 1927.

Complete discussion illustrated by several hundred reports of cases and with complete bibliography.

TROPICAL SURGERY AND SURGICAL PATHOLOGY. By Karuna K. Chatterji, F.R.C.S.I., Major I. T. F. Medical Corps, Surgeon, Medical College Hospitals, Calcutta. With a foreword by Major-General Sir R. Havelock Charles, G.C.V.O., K.C.S.I., M.D., Serjeant-Surgeon to H. M. the King. Cloth. Price, $6. Pp. 244, with 96 illustrations. New York: William Wood & Company, 1927.

Has special reference to surgery of amebiasis, filariasis and granulomas.

CYSTOSCOPY. A Theoretical and Practical Handbook containing Chapters on Separate Renal Function and Pyelography. By Jas. B. Macalpine, F.R.C.S., Honorary Surgeon and Surgeon in Charge of the Genito-Urinary Department, Salford Royal Hospital, Manchester. Cloth. Price, $7. Pp. 284, with 181 illustrations. New York: William Wood & Company, 1927.

New outline of subject with specially painted illustrations.

THE HEALTH OF THE CHILD OF SCHOOL AGE. By Various Authors. With a foreword by Sir Thomas Oliver, M.A., M.D., F.R.C.P., Professor of Medicine, University of Durham and College of Medicine, Newcastle-upon-Tyne. Cloth. Price, $1.80. Pp. 204. New York: Oxford University Press, 1927.

Compilation of popular articles on the health of the child.

INTRACRANIAL TUMOURS AND SOME ERRORS IN THEIR DIAGNOSIS. By Sir James Purves-Stewart, K.C.M.G., M.D., F.R.C.P., Senior Physician to Westminster Hospital. Cloth. Price, $3.75. Pp. 206, with 51 illustrations. New York: Oxford University Press, 1927.

Monograph on brain tumor with case reports and indications for operation.

AN ILLUSTRATED GUIDE TO THE SLIT-LAMP. By T. Harrison Butler, M.A., D.M., M.R.C.S., Honorary Ophthalmic Surgeon to the Coventry and Warwickshire Hospital. Cloth. Price, $9. Pp. 144, with 158 illustrations. New York: Oxford University Press, 1927.

Marvelously printed illustrations around which is a straight-reading text.

FUNDAMENTALS OF THE ART OF SURGERY. By John H. Watson, M.B.B.S., F.R.C.S., Surgeon to the Victoria Hospital, Burnlay. Cloth. Price, $6. Pp. 349, with 65 illustrations. New York: Paul B. Hoeber, Inc., 1927.

Well-written chapters devoted to principles rather than technic.

PRACTICAL OTOLOGY. By Morris Levine, M.D., Associate Professor of Otology, New York Post-Graduate Medical School and Hospital. Cloth. Price, $5.50. Pp. 387, with 148 illustrations. Philadelphia: Lea & Febiger, 1927.

Collection of lectures, well illustrated, and most practical.

CHEMICAL TESTS. A Manual for Chemists and Physicians. By Russell C. Erb., B.S., M.S., Associate Professor of Chemistry at the Philadelphia College of Osteopathy. Cloth. Price, $3. Pp. 262. Easton: Chemical Publishing Company, 1927.

Chemistry as outlined to students of osteopathy.

AN OUTLINE HISTORY OF OPHTHALMOLOGY. By Thomas Hall Shastid, A.M., M.D., F.A.C.S. Cloth. Price, $1.25. Pp. 34. Southbridge: American Optical Company, 1927.

A one-hour lecture giving chronology in ophthalmic investigation.

A FACSIMILE OF THE FIRST EDITION OF THE PHARMACOPOEIA AUGUSTANA. With Introductory Essays by Theodor Husemann. Boards. Pp. 259. Madison: State Historical Society of Wisconsin, 1927.

Replica of an ancient text.

A HANDBOOK OF DISEASES OF THE STOMACH. By Stanley Wyard, M.D., B.S., M.R.C.P., Physician to the Bolingbroke Hospital and the Victoria Hospital for Children. Cloth. Price, $5. Pp. 387, with 32 illustrations. New York: Oxford University Press, 1927.

MORTALITY STATISTICS, 1924. Twenty-Fifth Annual Report. Paper. Price, $2.25. Pp. 487. Washington, D. C.: Government Printing Office, 1927.

DIRECTORY OF THE AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS. Cloth. Pp. 119. Chicago: Charles J. Pollak, 1927.

Medicolegal

Release Covering Right of Action for Malpractice

(Retelle v. Sullivan (Wis.), 211 N. W. R. 756)

The Supreme Court of Wisconsin, in disposing in a single opinion of two actions, brought by father and son, to recover damages resulting from alleged malpractice, says that it appeared that the injury treated—a broken arm of the son—was sustained on or about Sept. 23, 1923; that the defendant's care and treatment ceased on Nov. 30, 1923; and that on June 4, 1924, a settlement was made with one Allison and his insurance carrier, by which Allison and his insurance carrier were released "from all actions, causes of action, and demands of every kind and nature which I now have, claim to have, or may hereafter claim to have against either or both of them arising out of or on account of said injury to said Russell Retelle." Russell was the son, and his arm was broken while he was on or about certain premises owned by Allison. The defendant's answers to the actions for malpractice set up as a defense to the actions the releases to the foregoing effect signed by the father and by the son, the latter signing by his guardian. Demurrers were filed to that portion of the answers, and from orders overruling the demurrers the plaintiffs appealed. The supreme court affirms the orders, on the ground that settled principles of law, as well as every consideration of justice, required that the demurrers be overruled.

An element of the damages which the plaintiffs might have recovered against Allison, at the time of the settlement with him, included damages resulting from improper or unskilful treatment of the broken arm by the defendant. This is well settled in Wisconsin law. On payments made by Allison, the plaintiffs discharged him and his insurance carrier as stated above. This was certainly sweeping and all-inclusive. It included that element of damages resulting from the defendant's alleged negligent treatment. The settlement thus made subrogated Allison, or the insurance carrier, or both, to any claim which the plaintiffs might have had against the defendant for damages resulting from his negligent treatment. If, prior to such settlement with Allison, the plaintiffs had a claim for damages against the defendant, such claim passed from them to Allison or to his insurance carrier on such settlement, and since said transaction the plaintiffs did not have any claim against the defendant. By their release they acknowledged full satisfaction for all damages from the broken arm, and they could not have two recoveries for the same damages. To permit the plaintiffs to recover in these actions would enable them to recover damages twice for the same injuries, and would either deny Allison the right of subrogation or impose double damages on the defendant physician.

Sanatorium Not Liable for Not Restraining Patient

(Hohmann v. Riverlawn Sanatorium et al. (N. J.), 135 Atl. R. 817)

The Court of Errors and Appeals of New Jersey, in affirming a judgment in favor of the defendants, says that the plaintiff, who brought this action as administratrix, brought it under what is known as the death act, contending that the death of her husband was the result of negligence of the defendants. He had been admitted to the sanatorium for treatment and examination, for and as to his mental condition. He had a tendency to commit suicide, having made two unsuccessful attempts to take his life prior to entering the sanatorium. After he had remained there nine or ten days he disappeared, and his body was afterward found hanging from a tree. At the conclusion of the plaintiff's case a nonsuit was moved and granted by the trial court on the grounds that no act of negligence had been shown, and because under such circumstances no recovery could be had under the death act. There was no error in this action of the trial court. There was no duty of restraint owing from the defendants toward the patient. He was not admitted to the sanatorium under any provision for restraint or confinement as the result of legal proceedings, nor did he voluntarily impose restraint and custody on himself by his agreement with the defendants, but by such agreement he was admitted as a patient for observation and medical treatment only. His death was not the proximate result of any failure of duty owing to him by the defendants under this agreement of admission.

Ending of Total Disability—Importance of Opinions

(Silvey v. Panhandle Coal Co. No. 5 (Ind.), 154 N. E. R. 778)

The Appellate Court of Indiana, in reversing an award of the industrial board of compensation for 35⅔ weeks to a workman who sprained his back, says that an attentive and thoughtful reading of the finding of facts and the award based thereon could not fail to reveal that something was lacking. Did the injured workman suddenly pass from a condition of total disability to a perfectly normal condition? A transition of that kind would be something unusual in human experience. Common observation does not prepare men to believe that a workman who suffered an injury to his spine which resulted in total disability for 35⅔ weeks would, at the end of that period, suddenly become able to resume hard labor in a coal mine. The usual award in such cases is (under the workmen's compensation act of Indiana) for compensation "during total disability not to exceed 500 weeks." That plan leaves the way open for future adjustments in accordance with changed conditions, and is therefore eminently fair and just.

A physician testified that this case resolved itself into a subjective proposition; that considering the history of the accident and the history of the case following, he would suspect that the man had a left side sacro-iliac sprain; that these sprains give trouble for quite a while, sometimes several months; but, on continued rest over the extended time that this man had had since the injury, with no history of recurrent injury, the witness would expect his condition to be well enough along for light work, while most of these complaints were usually entirely well after this period. It should be specially observed that the physician said "we would expect" the workman's "condition to be well enough along for light work at this time." He also said that the man should be "ordered to work." Of course, the physician did not realize that the industrial board has no power to order men to work.

It is provided by the statute, however, that, if the employer desires to reduce the amount of compensation for which he is liable, he may furnish the injured workman employment suitable to his capacity, and if the workman refuses employment of that kind, "he shall not be entitled to any compensation at any time during the continuance of such refusal unless in the opinion of the industrial board such refusal was justifiable." In accordance with the evidence presented to the board, the award in this case should grant compensation to the workman during total disability not exceeding 500 weeks, and evidence should be heard as to whether there had been any change in his condition since the former hearing, the board to make such further award as the evidence might warrant. The presumption is that the injured workman is entitled to full compensation until he is able to resume work of the same kind or of the same general character as the work in which he was engaged at the time he received the injury.

In cases like the one at bar, a great responsibility rests on the men of medical science, and their opinions and conclusions are ordinarily entitled to great weight where they have made a personal examination of the patient. Equipped with a store of knowledge acquired by study and observation, the physician is in a position to ascertain his patient's condition uninfluenced by anything except the cold scientific truth. The patient's situation is quite different. He has a vivid recollection of the accident; he has endured the pain; and the doubt, the fear, and the anxiety are his.

Decision Against Chiropractor on Complaint and Law

(Frutiger v. State ex rel. Davis (Ala.), 111 So. R. 37)

The Supreme Court of Alabama, in affirming a judgment for the plaintiff, says that this action in the nature of quo warranto, brought in the name of the state on the relation of the solicitor of the tenth judicial circuit, was for the purpose of excluding respondent Frutiger from the exercise of the profession of treating, or offering to treat, diseases of human beings. The complaint was in part to the effect that the respondent, since Aug. 18, 1924, had intruded into the profession of treating, or offering to treat, diseases of human beings (a profession requiring a license, or certificate or other legal authorization within this state), without having obtained a certificate of qualification from the state board of medical examiners of the state of Alabama, or the license required by law, and was still unlawfully practicing the profession in Jefferson County, Ala. The respondent demurred to the complaint on the grounds that it was vague, uncertain and indefinite; that it failed to set forth, except by way of conclusion, that he was treating or offering to treat diseases of human beings; that it failed to allege or show the particular certificate of qualification from the state board of medical examiners that he failed to obtain; that it was not alleged or shown in what manner or way or according to what school or science he was treating or offering to treat diseases of human beings; that the license or certificate of qualification that it was alleged he had not obtained was not set forth with sufficient certainty or definiteness. But the complaint was sufficient, and the demurrer interposed to it was properly overruled. Chiropractors are required by law to have a certificate of qualification to treat diseases of human beings. Section 2837, code of 1923.

This court has said that "chiropractus" is specially named as one of the schools of "mechanotherapy" in whose favor all educational qualifications are waived except a diploma showing graduation from such school. The subjects on which the applicants are examined are limited. The certificate entitles the holder to treat in accordance with the teachings of his school or sect. That sufficiently answered the argument made in this case on the construction of the statute by reason of the use of the word "mechanotherapy" therein. Nor can sound objection be made to the statute in that the certificate so issued to the chiropractor is limited to treatment in accordance with his school. His examination is likewise limited, and the limitation of his certificate as prescribed by the statute is in accord with his methods of treatment. Nor does the court think that the statute is unreasonable in requiring examination on some subjects which are not needed in the practice of this particular school.

It was averred in the answer that the medical board for the examination of applicants is not sufficiently skilled and competent to pass on the proficiency of one in the respondent's line of work, and that the members thereof are prejudiced against it, and that a certificate could not therefore be obtained, though there was no allegation that the respondent had ever presented himself for examination. The argument in support of these averments was addressed, however, to a wholly anticipated unfair administration of the law, and in no manner affected the validity of the law itself. The statute here assailed was enacted under the police power of the state in promotion of the public health, and has been upheld in previous decisions of this court. This court entertains the view that the statute is not unreasonably discriminatory or violative of any constitutional provision.

Damages Allowed for Injury to Weak-Minded Child

(Ketterer v. Public Service R. Co. (N. J.), 135 Atl. R. 679)

The Supreme Court of New Jersey says that a boy about 3 years old was run over by a car of the defendant. His right leg was so injured that it was amputated "just below the crotch," or so that about 4 inches of bone remained. His left leg was broken at a corresponding point and crushed so that it seemed doubtful whether it would recover, but it eventually did. The boy was deficient mentally, being somewhere between an imbecile and a moron, and his intelligence would never exceed that of a child of from 8 to 12 years of age. This condition existed prior to the happening in question and was not produced by it. He had a verdict for $15,000 damages, and his father one for $7,000. The court was asked to set aside both verdicts on the ground that they were excessive, the argument of the defendant against the amounts of the verdicts being that the earning capacity of the boy, because of his mental deficiency, would be nothing or at best very small. But the court does not feel warranted in disturbing the verdicts, which, in its judgment, could have no possible taint of excessiveness in the case of a normal child. Conceding that the boy's capacity to earn was below that of one of normal mentality, the court thinks that the jury was warranted in taking into consideration that such lack of mentality left open to the boy only one means of earning and that was by manual labor, and that by the deformity resulting from his injury even that door was closed against him and he must go through the remainder of his life not only mentally but physically deficient and entirely dependent on others for a means of existence. As to the father, practically the same argument applied. Not only must he maintain a mentally incompetent son, but one rendered a cripple, unable to earn for himself, and whose care for the future must therefore be more highly expensive than if he were of normal mentality.

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Otolaryngology, Detroit, September 12-16. Dr. W. P. Wherry, Bankers Reserve Life Building, Omaha, Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Asheville, N. C., September 15-17. Dr. J. E. Davis, 111 Josephine Avenue, Detroit, Secretary.

American Electrotherapeutic Association, New York, September 12-16. Dr. Richard Kovacs, 223 East Sixty-Eighth Street, New York, Secretary.

American Roentgen Ray Society, Montreal, Canada, September 20-23. Dr. C. L. Martin, Baylor Hospital, Dallas, Texas, Secretary.

Colorado State Medical Society, Glenwood Springs, September 6-8. Dr. F. B. Stephenson, Metropolitan Building, Denver, Secretary.

Idaho State Medical Association, Twin Falls, August 29-31. Dr. J. N. Davis, Kimberly, Secretary.

Indiana State Medical Association, Indianapolis, September 28-30. Mr. T. A. Hendricks, Hume-Mansur Building, Indianapolis, Executive Secretary.

Missouri Valley, Medical Society of the, Des Moines, Iowa, September 14-16. Dr. Charles Wood Fassett, 115 East Thirty-First Street, Kansas City, Mo., Secretary.

Oregon State Medical Society, Salem, September 1-3. Dr. F. D. Stricker, Medical Arts Building, Portland, Secretary.

Washington State Medical Association, Tacoma, August 29-31. Dr. C. H. Thomson, 506 Cobb Building, Seattle, Secretary.

Wisconsin, State Medical Society of, Eau Claire, September 21-23. Mr. J. G. Crownhart, 153 Oneida Street, Milwaukee, Executive Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

39: 135-353 (May 15) 1927

Inanition: I. Action of Prolonged Fasting on Cells and Tissues. U. D'Ancona.—p. 135.

Quantitative Study of Follicular Atresia in Mouse. E. T. Engle, San Francisco.—p. 187.

Elastic Tissue of Heart in Advancing Age. A. M. Miller and O. C. Perkins, New York.—p. 205.

Rôle of Thyroid and Parathyroid Glands in Growth of Heart and Lungs. F. S. Hammett, Philadelphia.—p. 219.

Rôle of Thyroid Apparatus in Growth of Liver, Kidneys and Spleen. F. S. Hammett, Philadelphia.—p. 239.

Relative Rôle Played by Embryonic Veins in Development of Mammalian Vena Cava Posterior. E. G. Butler, Princeton, N. J.—p. 267.

American J. of Obst. & Gynec., St. Louis

13: 551-688 (May) 1927

*Toxemias of Pregnancy. H. J. Stander, Montreal.—p. 551.

*Syncytial Endometritis and Syncytioma. M. Rosenzweig, New York.—p. 563.

*Ovarian Luteoma. S. A. Wolfe, New York.—p. 575.

*Pulmonary Embolism Complicating Pregnancy, Labor and Puerperium. E. E. Bunzel, New York.—p. 584.

Results in 130 Pregnancies Subsequent to Cesarean Section in Ninety-Six Patients. F. W. Rice, New York.—p. 591.

Treatment of Menstrual Disorders by Roentgen Rays. A. J. Rongy, New York.—p. 598.

Structure and Functions of Endocrine Glands, Particularly Ovary. L. Fraenkel, Breslau, Germany.—p. 606.

*Morbidity and Mortality of Cesarean Section. T. L. Montgomery, Philadelphia.—p. 610.

*Pregnancy and Heart Disease. J. Corwin, W. W. Herrick, M. Valentine and J. M. Wilson, New York.—p. 617.

Separation of Symphysis Pubis and Fracture of Ascending Ramus with Normal Delivery. J. Walker, Philadelphia.—p. 623.

Perineal Injuries During Parturition: 336 Cases. J. F. Carrell, Philadelphia.—p. 627.

Cesarean Section. C. B. Lull, Philadelphia.—p. 633.

Advantages of Rectal Palpation During Pregnancy and Labor. H. Stuckert, Philadelphia.—p. 642.

Viability of Cast-Off Menstrual Endometrium. R. S. Cron and G. Gey, Milwaukee.—p. 645.

Eclampsia with Relatively Low Blood Pressure. A. L. Desser, Los Angeles.—p. 647.

Intra-Abdominal Pregnancy with Living Child. W. P. Daly, Hartford, Conn.—p. 649.

Toxemias of Pregnancy.—Evidence is presented by Stander to show that fats do not pass the placental membrane from mother to child, that the fetus utilizes mainly carbohydrates, and that there is a consequent drain on the carbohydrates of the mother. This leads to a tendency toward acetonuria in normal pregnancy and to the so-called acidosis of pregnancy. In normal pregnancy, then, the mother has to change her metabolism to suit her offspring, and the greater part of this change is perhaps instituted between the second and fourth months. Further work is necessary to prove conclusively that the vomiting of pregnancy is dependent on this change in metabolism, although the evidence so far adduced makes it highly probable. It is perhaps because of this drain on the maternal carbohydrates that glucose has been found to be of some benefit in the treatment of vomiting of pregnancy.

Syncytial Endometritis and Syncytioma.—Two cases are presented by Rosenzweig of transitional lesions in the chorioma group: (*a*) syncytial endometritis, and (*b*) syncytioma. The lesions are essentially benign. A review of the literature shows that there is not a general cognizance of these lesions, and further that many cases reported as typical malignant chorio-epithelioma are really of these transitional types. Rosenzweig feels that the incidence of typical malignant chorio-epithelioma or choriocarcinoma is much less frequent than has been supposed.

Ovarian Luteoma.—Wolfe reports a case of true ovarian luteoma. The cells are of the pale type but granular, grow diffusely or in alveoli, and have no contact with capillaries. The tumors are gray-yellow on gross appearance.

Pulmonary Embolism in Pregnancy.—Bunzel analyzes thirty-two cases of pulmonary embolism which occurred in 31,716 pregnant patients, approximately 0.1 per cent. The incidence of pulmonary embolism was three times greater in operative than in normal deliveries. The incidence of pulmonary embolism was 1.5 per cent in all cases of cesarean section, and 2 per cent in all cases of placenta praevia. Secondary embolism was uncommon, occurring only twice in the thirty-two cases; i. e., in about 6 per cent of the cases, and following the first embolus by at least two weeks. In the entire series of thirty-two cases the mortality was 65 per cent, and in the twenty-four patients delivered the mortality was 66.6 per cent. In the cases that terminated fatally, 70 per cent of the deaths occurred within an hour from the onset of symptoms, and 90 per cent within twenty-four hours.

Morbidity and Mortality of Cesarean Section.—Twenty-five cesarean sections with four maternal deaths (16 per cent) are reported on by Montgomery. Twenty-six infants were delivered; of these, three were born dead (11.9 per cent) and three died after delivery (11.9 per cent), a total mortality of 23.8 per cent. The three stillbirths occurred in cases of antepartum bleeding; one in placenta praevia, the other two in premature separation of the placenta. Of the three infants who died after delivery one was premature (8½ months) in a case of placenta praevia, the second was syphilitic and the third not viable. Section was performed for various indications, as an elective operation or early in labor in nine cases. There were no maternal deaths. In nine cases section was performed after ten hours of labor. In this group there were two maternal deaths, 22.2 per cent. Cesarean section and myomectomy were performed on two patients for fibroma uteri complicating labor with one maternal death. Five patients with placenta praevia were treated by cesarean section with two maternal deaths. Two patients with complete separation of the placenta and with closed cervix were treated by abdominal operation, one by simple cesarean section, the other by cesarean section and hysterectomy. Both mothers made an uncomplicated recovery. In no case was cesarean section performed for eclampsia.

Pregnancy and Heart Disease.—One hundred and ninety-six cases of organic cardiac disease complicating pregnancy are analyzed by Corwin et al. The maternal mortality was about 6 per cent. The mitral valve was affected most, and the rheumatic group of diseases was the usual antecedent infection.

American Journal of Pathology, Boston

3: 179-288 (May) 1927

*Pathology of Bone Marrow in Pernicious Anemia. F. W. Peabody, Boston.—p. 179.

*Transformation of Malignant Paravertebral Sympathicoblastoma into Benign Ganglioneuroma. H. Cushing and S.B. Wolbach, Boston.—p. 203.

Reticulum of Lung: IV. In Reparative Process of Tuberculous Lesion With and Without Caseation. W. S. Miller, Madison, Wis.—p. 217.

Pulmonary Spirochetosis. C. E. Smith and G. Y. Rusk, San Francisco.—p. 225.

Adenocarcinoma of Uterus in Rabbit. G. Y. Rusk and N. Epstein, San Francisco.—p. 235.

*Tuberculosis of Tongue: Case. W. H. Feldman, Fort Collins, Colo.—p. 241.

Transplantation and Individuality Differentials in Inbred Families of Guinea-Pigs. L. Loeb and S. Wright, Washington, D. C.—p. 251.

*Histogenesis of Urinary Casts. H. Jackson, Jr., Boston.—p. 285.

Pathologic Changes of Bone Marrow in Pernicious Anemia.—Observations made by Peabody on the structure of the bone marrow in pernicious anemia, on tissue obtained at biopsy at different stages of the disease, show that the myeloid hyperplasia is most marked during relapse, and that the structure of the marrow tends to return to normal during remission. During relapse the essential histologic lesion is a rapid and extensive proliferation of primitive cells (megaloblasts), with a relatively diminished tendency toward the differentiation of mature cells of the erythrocyte series. The bone marrow shows a cellular hyperplasia, but it is functionally inefficient.

Transformation of Sympathicoblastoma into Ganglioneuroma.—A paravertebral swelling at the sixth thoracic level occurred in the back of a child, aged 2 years, following a trauma. The lesion proved on exploration to be a cellular

sympathicoblastoma (sympathetic neuroblastoma) which was mistaken at the time for a sarcoma. Cushing and Wolbach believe that the tumor had taken its origin from the region of an intervertebral foramen, and had extended into the spinal canal as well as into the spinal muscles. Apparently under the influence of Coley's toxins, the activity of the growth subsided. Ten years later, owing to the persistence of a paraplegia, an exploratory laminectomy was performed. This disclosed a relic of the former growth whose cells had become completely differentiated into ganglion, capsular and neurilemma cells.

Tuberculosis of Tongue.—Feldman reviews 283 cases and reports one new case. The disease is nearly five times as frequent in the male as in the female.

Histogenesis of Urinary Casts.—Evidence is presented by Jackson that at least certain casts in chronic nephritis are formed by the coalescence of granules found in the circular reticulum of the kidney, and that this reticulum is in turn formed by an abnormal budding of the renal cells. This process is not peculiar to the kidney, at least so far as the initial stages are concerned, for it has been seen in other organs under varied conditions. The reaction is to be interpreted as due to an abnormal environment about the cells involved.

American J. Roentgenol. & Rad. Therapy, New York

17: 507-610 (May) 1927

Clinical and Roentgen-Ray Findings in Healthy Adult Chest: Committee Report.
Infectious Osteomyelitis: Diagnosis. R. S. Bromer, Philadelphia.—p. 528.
*Roentgenographic Aid in Diagnosis of Intestinal Obstruction. K. S. Davis, Los Angeles.—p. 543.
*Influence of Roentgen Rays on White Mice and Progeny. M. Levine, New York.—p. 546.
Os Vesalianum Pedis. G. G. Davis, Chicago.—p. 551.
Hemorrhagic Infarct of Lung. P. R. Casellas, El Paso, Texas.—p. 554.
Profile Roentgenogram of Optic Canal. H. A. Goalwin, New York.—p. 573.

Radiographic Diagnosis of Intestinal Obstruction.—Davis asserts that the diagnosis of intestinal obstruction and the approximate site of the lesion can quickly be determined by means of a roentgenogram, because the intestine above the obstruction is ballooned out with gas.

Effect of Roentgen Ray on Mice.—Levine asserts that mice exposed to a dose of roentgen rays which corresponds to a small human erythema dose are not visibly affected. The young of these mice do not show defects through the sixth generation. By increasing the dose to what may be described as a large human erythema dose, sterility occurs.

Boston Medical and Surgical Journal

196: 803-846 (May 19) 1927

Preventorium Problems. J. B. Hawes, 2d, Boston.—p. 803.
*Salt-Free Diet in Arterial Hypertension. E. R. Blaisdel, Portland, Me. —p. 808.
Lessons from Tuberculosis Fight. J. S. Stone, Boston.—p. 812.

196: 847-892 (May 26) 1927

Increase of Surgical Conditions as Cause of Death in Diabetes. H. F. Root, Brookline, Mass., and S. Warren, Boston.—p. 864.
Medical Incunabula in William Norton Bullard Collection. J. F. Ballard. —p. 865.

Salt-Free Diet in Arterial Hypertension.—In the thirty-five cases reported on by Blaisdell, the blood pressure was reduced to normal in only a small number of cases, but there was a marked lowering of both the systolic and diastolic pressures in nearly every case. There was a decided relief from symptoms in all cases. Although under observation for a comparatively short length of time, the disease seemed to be arrested in every instance. With few exceptions, the results obtained were independent of time. The blood pressure was reduced within the first month and remained stationary, as long as the patient remained faithful to the diet. None of the patients were put to bed or told to be quiet in order to reduce the blood pressure. As a matter of fact, the majority of patients were able to carry on their work with greater ease after being on the diet. A decrease in activity was advised in those patients with advanced heart complications, but little heed was paid to this advice. The salt-free diet prescribed in these cases is the same as that advocated by Allen. Sodium chloride or sodium bicarbonate were not used in preparing the foods, and neither was used at the table. The foods chosen were from those lowest in salt content. After the initial elimination of salt, an attempt was made to keep the twenty-four hour urine chlorides at 0.5 Gm., although they ranged from 0.3 Gm. to 0.9 Gm. As a precautionary measure, protein was restricted to 80 Gm. daily. In the presence of nitrogen retention, the protein intake was kept lower than this. If the blood nitrogen was high, a strict salt-free diet was not prescribed at once; the patient was first put on a low protein diet for a few days. This was done in order to prevent the precipitation of uremia.

196: 933-972 (June 9) 1927

Industrial Surgery. W. H. Rose, Worcester, Mass.—p. 933.
*Low Protein Diet in Chronic Nephritis. M. Smith, Boston.—p. 941.
Surgical Instruments Designed by Lord Lister. C. J. S. Thompson, London.—p. 946.
Treatment of Congenital Pyloric Stenosis. J. Garland, Boston.—p. 951.

Low Protein Diet in Chronic Nephritis.—Smith cites a case of chronic nephritis in which an average daily protein intake of 0.26 Gm. per kilogram of body weight sustained a boy, aged 17, for six months without untoward effects.

Canadian Medical Association Journal, Toronto

17: 501-636 (May) 1927

Irregular Practice and Quackery. H. Rolleston.—p. 501.
Second Conference on Medical Services in Canada. A. Primrose.—p. 509.
Points of Contact Between Departments of Public Health, Medical Profession and Public. J. A. Amyot.—p. 519.
Protein Metabolism. G. Lusk.—p. 522.
Diphtheria Toxoid as Immunizing Agent. J. G. Fitzgerald.—p. 524.
*Digitalis. V. E. Henderson and M. I. Sparks.—p. 530.
*Coronary Thrombosis as Part of Acute Bacterial Infection. N. B. Gwyn. —p. 535.
Peptic Ulcer. A. S. Kirkland.—p. 538.
*System of Microscopic Tubules in Thyroid. R. R. Fitzgerald.—p. 542.
*Toxic Cirrhosis of Liver. C. L. Connor.—p. 546.
*Cutaneous Reactions to Flax and Linen in Bronchial Asthma and Hay-Fever. D. Nicholson.—p. 552.
Cyst of External Semilunar Cartilage of Knee: Case. J. A. Nutter and C. L. Blew.—p. 555.
Vincent's Disease: Infection Due to Fusospirillary Invasion. F. T. Cadham.—p. 556.
Bronchoscopic Method of Diagnosis and Treatment of Certain Disorders of Lungs and Bronchi. A. A. Halliday.—p. 561.
Ulcers and Nonpenetrating Wounds of Cornea. R. E. Mathers.—p. 564.
Canadian Hospital Efficiency. S. E. Moore.—p. 567.
New Instrument for Tucking Operations. W. T. Gratton.—p. 571.
Pernicious Anemia. W. F. Hamilton.—p. 572.

Canadian Grown Digitalis.—Hitherto all the digitalis preparations on the Canadian market have been prepared from English or German grown foxglove. Some work recently completed in Henderson and Sparks' laboratory has shown that Canadian grown digitalis is quite up to the English standard in glucosidal content. The Canadian leaves used in these investigations were grown in British Columbia, and were compared with a sample of English commercial leaf. Tests made by both the standard frog and cat methods showed that the British Columbia sample had a potency equaling the English, and distinctly higher if grown on well fertilized ground (sodium nitrate). With such facts in hand it seems quite possible that very shortly Canada may be able to grow its own digitalis, and in time supply the demand of the entire Canadian medical profession.

Coronary Thrombosis and Bacterial Infection.—In the two cases reported by Gwyn, it has seemed probable that suddenly occurring, serious cardiac disorder in the course of the infection was due to a coronary thrombosis, an infectious thrombosis of the same nature as the process seen more usually in the peripheral and cerebral vessels. In both cases the symptoms and course make a picture identical with the types of the disorder as described by Herrick, save that as they were both febrile at the time of the accident, the fever spoken of as the fever of infarction could not be demonstrated, and an already elevated white cell count precluded the estimation of the leukocytosis of thrombosis.

Microscopic Tubules in Thyroid.—The presence of a system of microscopic capillaries in the thyroid gland is confirmed by Fitzgerald's studies. The appearance of this system is described in different physiologic states of the normal gland, and in some pathologic states of the diseased gland.

Toxic Cirrhosis of Liver.—Four cases are recorded by Connor which show the development both clinically and patho-

logically of the condition known as acute yellow atrophy of the liver into definite cirrhosis of the liver.

Skin Sensitiveness to Flax and Linen.—Nicholson reports hypersensitiveness to flax and linen occurring in 4.4 per cent of a series of 158 cases. A dilution of 1:1,000 of the protein in a skin scratch produced a wheal. Injections of 0.5 cc. of 1:100,000 produced asthma. Four of the patients were hypersensitive to many substances, such as animal hairs, feathers, fruits and pollens. Avoiding flax and linen did not, in any case, relieve the asthma. Treatment with gradually increasing doses of flax was disappointing.

Florida Med. Assoc. Journal, Jacksonville

13: 254-277 (May) 1927

Relation of Functions of Glands of Internal Secretion to Thinking, Feeling and Striving of Man. L. F. Barker, Baltimore.—p. 254.
Mechanical Aids in Estimating Cardiac Reserve. H. Caldwell, Lake City. —p. 261.
Treatment of Heart Disease. M. Mallory, Orlando.—p. 263.
Congenital Hypertrophic Pyloric Stenosis. E. Jelks, Jacksonville.—p. 268.

Indiana State Med. Assoc. Journal, Ft. Wayne

20: 175-206 (May) 1927

Diagnostic Puncture of Antrum of Highmore. B. D. Ravdin, Evansville. —p. 175.
Treatment of Club Foot. R. A. Milliken, Indianapolis.—p. 179.
*Relation of White Snakeroot to Human Milk Sickness. A. A. Hansen, LaFayette.—p. 182.
Diphtheria Mortality in Indiana. W. W. Lee, Indianapolis.—p. 187.
Diphtheria Prevention in Indiana. W. F. King, Indianapolis.—p. 189.

White Snakeroot and Milk Sickness.—Hansen investigated a number of farms in Indiana on which cases of human milk sickness occurred. In every case it was possible to trace the cause of the trouble to the use of milk or butter from cows that had grazed in woodland pastures badly infested with white snakeroot. In most of these pastures the snakeroot showed plain evidence of having been grazed on, and in most cases the animals have died after exhibiting symptoms typical of white snakeroot poisoning.

Iowa State Med. Society Journal, Des Moines

17: 183-222 (June) 1927

Cardiac Clinic. P. D. White, Boston.—p. 190.
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Scarlet Fever Control. J. E. Dyson, Des Moines.—p. 201.
Plan for Unfolding Project of Applying Motion Pictures to Medical Education. J. F. Montague, New York.—p. 204.

Journal of Biological Chemistry, Baltimore

73: 1-369 (May) 1927

*Distribution of Electrolytes in Dogs Following Ligation of Ureters. D. W. Atchley and E. M. Benedict, New York.—p. 1.
*Microdetermination of Pentose in Yeast Nucleic Acid and Its Derivatives. W. S. Hoffman, Baltimore.—p. 15.
*Nitrogen Metabolism in Puerperium. V. J. Harding and R. C. Montgomery, Toronto.—p. 27.
*Influence of Kidney Function on Concentration of Certain Nonprotein Sulphur Compounds in Blood. W. Denis and L. Reed, New Orleans. —p. 41.
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*Influence of Ultraviolet Light on Calcium and Phosphorus Metabolism in Milking Cows: X. E. B. Hart, H. Steenbock, H. Scott and G. C. Humphrey, Madison, Wis.—p. 59.
Use of Magnesium Perchlorate Trihydrate (Dehydrite) and Asbestos-Sodium Hydroxide) in Gravimetric Metabolism Determinations, for Water and Carbon Dioxide Absorption. M. O. Lee and J. B. Brown, Columbus, Ohio.—p. 69.
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Portable Form of Manometric Gas Apparatus. D. D. Van Slyke, Rochester, N. Y.—p. 121.
Carbon Dioxide Factors for Manometric Blood Gas Apparatus. D. D. Van Slyke and J. Sendroy, Jr., Rochester, N. Y.—p. 127.
*Antirachitic Value of Irradiated Cholesterol and Phytosterol: VII. On Phosphorus and Calcium Balance. A. F. Hess and E. Sherman, New York.—p. 145.
*Human Milk Studies: I. Vitamins. I. G. Macy, J. Outhouse, M. L. Long and A. Graham, Detroit.—p. 153.
Id.: II. Quantitative Estimation of Vitamin A. I. G. Macy, J. Outhouse, A. Graham and M. L. Long, Detroit.—p. 175.
*Id.: III. Quantitative Estimation of Vitamin B. I. G. Macy, J. Outhouse, A. Graham and M. L. Long, Detroit.—p. 189.
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*Blood Chloride Methods. J. J. Short and A. D. Gellis, New York. —p. 219.
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Stimulation of Sugar-Regulating Mechanism as Shown by Duplicate Blood Sugar Curves. W. G. Lennox, Boston.—p. 237.
*Blood as Physicochemical System: IV. D. B. Dill, C. van Caulaert, L. M. Hurxthal, J. L. Stoddard, A. V. Bock and L. J. Henderson, Boston.—p. 251.
Walden Inversion: IX. Mechanism of Hydrolysis of Optically Active Propylene Oxide. P. A. Levene and A. Walti, New York.—p. 263.
Is Insulin Inactivated by Glucose? V. du Vigneaud, Rochester, N. Y. —p. 275.
Effects of Protein Split-Products on Metabolism: I. Fraction Extracted by and Precipitated in Butyl Alcohol (Fraction I). D. Rapport and H. H. Beard, Cleveland.—p. 285.
Id.: II. Individual Amino-Acids of Fraction I of Butyl Alcohol Extraction, and Their Relation to Specific Dynamic Action of Protein. D. Rapport and H. H. Beard, Cleveland.—p. 299.
Glutelins: I. α-and β-Glutelins of Wheat (Triticum Vulgare). F. A. Csonka and D. B. Jones, Washington, D. C.—p. 321.
Action of Alkali and Hydrogen Peroxide on Glyoxals. T. E. Friedemann, St. Louis.—p. 331.
*Determination of Lactic Acid. T. E. Friedemann, M. Cotonio and P. A. Shaffer, St. Louis.—p. 335.
Condenser Unit for Determination of Lactic Acid. H. A. Davenport and M. Cotonio, St. Louis.—p. 359.
Cholesterol Content of Hair, Wool and Feathers. H. C. Eckstein, Ann Arbor, Mich.—p. 363.

Effect of Ligation of Both Ureters.—A study has been made by Atchley and Benedict of the acute renal insufficiency produced in dogs by ligation of both ureters. Profound changes occur in the distribution of the electrolytes of the blood and tissues: increase in phosphates plus sulphates; decrease of chlorides plus carbonates. Whole blood changes parallel those of serum, and most of the tissue analyses showed that tissue chloride changed in the same direction as serum chloride.

Determination of Pentose.—A micromethod of determining pentose in free or combined form has been devised by Hoffman, which is based on the methods of Pervier and Gortner, and Youngburg and Pucher. A study of the pentose distribution in yeast nucleic acid confirms the prevailing idea that yeast nucleic acid contains the same number of purine elements as it does pyrimidine elements.

Nitrogen Metabolism in Puerperium.—Harding and Montgomery assert that high calory, high carbohydrate diets do not check the normal involution of the human uterus. The nitrogen loss and the creatinuria of the puerperium are referable to the processes attending the onset of lactation rather than to the involution of the uterus, though the latter factor is not necessarily excluded.

Influence of Kidney Function on Sulphur Compounds.—In dogs poisoned with uranium nitrate, it was found by Denis and Reed that the concentration of the inorganic sulphates and of the neutral sulphur fraction of the blood was directly dependent on the volume of urine excreted, and that in the case of animals with diuresis whose kidneys had been injured to such an extent that the nonprotein nitrogen of the blood was much increased, there was frequently found a large decrease in the inorganic and total sulphates, and a less striking fall in the neutral sulphur fraction. As the volume of urine diminished to normal or subnormal values the concentration of inorganic sulphate and of neutral sulphur slowly rose, and in some cases attained values from 100 to 300 per cent above the normal concentration.

Effect of Sulphur on Sulphur Compounds.—Examination made by Denis and Reed of the urine of animals that had been fed a standard ration to which had been added powdered sulphur to the extent of 0.5 Gm. per kilogram daily showed that an average of only 10 per cent of the administered sulphur had been absorbed. It is assumed that the observed increases in total urinary sulphur are due to the oxidation of hydrogen sulphide formed in the intestine by the bacterial action on the sulphur. As these increases in total urinary sulphur amounted in some experiments to several hundred per cent of the basal value, it would appear probable that a portion of the sulphur-containing bodies of

the urine may not originate exclusively from intracellular metabolism of protein fragments but may arise in part from the oxidation of the intestinal hydrogen sulphide. Analysis of the blood showed in some cases an increase in the non-protein sulphur compounds and in others a marked decrease.

Effect of Ultraviolet Rays on Calcium and Phosphorus Metabolism.—Apparently ultraviolet rays have little, if any, direct influence on the calcium and phosphorus metabolism of dairy cows, on milk production or on the calcium and phosphorus content of the milk secreted. It is suggested by Hart et al. that the cow derives its antirachitic vitamin from the feed, and is different in this respect from man, the goat, the chicken, and probably the rat, all of which can be favorably influenced directly by the short wave lengths of solar radiation.

Antirachitic Value of Irradiated Cholesterol.—Experiments made by Hess and Sherman indicate that irradiated cholesterol, when given by mouth or subcutaneously, is unable to raise the calcium content of the blood above the normal. Nor is it able to prevent the fall of calcium brought about by parathyroidectomy. Metabolism tests show, however, that irradiated cholesterol, when added to a rickets-producing ration which is low in phosphorus, brings about a definite increase in the retention of phosphorus and calcium.

Estimating Vitamins in Human Milk.—A standardized technic for the quantitative estimation of the vitamin content of human milk is presented by Macy et al. A new method for testing the vitamin A content of foods is described. The effectiveness of the vitamin B-free ration is discussed. Data are presented which indicate the presence of two factors in yeast, instead of the one hitherto recognized vitamin B.

Antineuritic Potency of Human Milk.—From the data presented by Macy et al., it is concluded that the antineuritic potency of mixed human milk, at least from a group of women receiving the average American dietary, is very slight. It is possible that many mothers do not supply enough of vitamin B to their babies. For the economy of the mother's nutrition and to safeguard her offspring, food materials rich in this important food component should form a prominent part in the diet of pregnant and lactating women. Food substances rich in vitamins should be introduced early in the nursing period of the infant, whether it be breast or artificially fed.

Blood Chloride Methods.—An adaptation of the McLean-Van Slyke iodometric principle to the Folin-Wu tungstic acid filtrate is described by Short and Gellis. This is believed to be preferable to the Volhard titration. The proposed method possesses the advantages of being short, simple and accurate.

Blood as Physicochemical System.—Dill et al. present the results of a comparative study of the respiratory functions of the blood in two normal resting men and in a horse.

Determination of Lactic Acid.—A procedure is described by Friedemann et al. for the determination of lactic acid based on oxidation.

Journal of Clinical Investigation, Baltimore

4: 149-306 (June 20) 1927

*Velocity of Blood Flow: III. Relation to Other Aspects of Circulation (1) in Rheumatic and Syphilitic Heart Disease. H. L. Blumgart and S. Weiss, Boston.—p. 149.

Id.: IV. (2) in Arteriosclerosis and Arterial Hypertension. H. L. Blumgart and S. Weiss, Boston.—p. 173.

*Id.: V. Physiologic and Pathologic Significance. H. L. Blumgart and S. Weiss, Boston.—p. 199.

*Alterations in Liver Function as Index of Toxemia in Pneumococcus Lobar Pneumonia. B. R. Harris, New Haven, Conn.—p. 211.

*Effect of Epinephrine on Partition of Foodstuffs in Obese and Normal Individuals. C. I. Krantz and J. H. Means, Boston.—p. 225.

*Excretion of Albumin and Globulin in Nephritis. A. Hiller, J. F. McIntosh and D. D. Van Slyke, New York.—p. 235.

Influence of Edema on Capacity of Blood Plasma to Modify Fluid Imbibition by Muscle. E. L. Compere, Chicago.—p. 253.

*Oxygen Consumption, Oxygen Debt and Lactic Acid in Circulatory Failure. J. Meakins and C. N. H. Long, Montreal.—p. 273.

*Concentration of Urea in Blood of Normal Individuals. E. M. MacKay and L. L. MacKay, San Francisco.—p. 295.

Velocity of Blood Flow in Syphilitic Heart Disease.—Observations made by Blumgart and Weiss on syphilitic patients indicate that there is a definite relationship between the degree of circulatory sufficiency and the arm to arm velocity of blood flow, and that the latter measurement is an objective and in general a quantitative index of the state of the circulation. Observations before, during and after the disappearance of the signs of chronic passive congestion indicate that the circulation time and the vital capacity may show deviations from the normal before the clinical signs of congestive failure appear. In patients whose condition is improving, the velocity of the blood flow and the vital capacity may increase before the clinical evidences of chronic passive congestion disappear and the patient has regained full circulatory compensation. Contrary to general experience, certain patients with syphilitic aortitis, although they exhibit symptoms of breathlessness, precordial pain and lowered vital capacities, nevertheless have normal velocities of blood flow. These observations support the opinions of those investigators who believe that pain and dyspnea in patients with syphilitic aortitis may be due to a reflex mechanism rather than to chronic passive congestion.

Measuring Mean Velocity of Blood Flow.—Evidence is presented by Blumgart and Weiss that the arm to arm circulation time in normal resting individuals is a measure of the mean velocity of blood flow. Clinical measurements and the experimental evidence of others indicate that the path traversed by the radium C is uniform from patient to patient. With the onset of circulatory insufficiency, the vital capacity shows a decrease somewhat earlier than the blood flow, whereas the rise in venous pressure occurs only when the circulatory failure is considerably more pronounced.

Effects of Pneumococcus on Liver Function.—In order to determine the effects of pneumococcus lobar pneumonia on hepatic function, dye elimination tests, serum bilirubin determinations and urine urobilinogen and urobilin tests were performed by Harris on thirty patients. Dye retention was found to occur consistently, the degree increasing as the disease progressed. A definite relationship between the severity of the infection (as measured by outcome) and the degree of liver dysfunction was not found. When considered according to the type of infecting pneumococcus, a suggestive relationship was found in the pneumonias of types I and III. Following recovery, dye retention was not present, indicating that the liver injury was not permanent. Urobilinuria was consistently present during the acute febrile period of the disease. The serum bilirubin was within normal limits in all cases except one, a patient with manifest jaundice. Impairment of function in type III pneumonias, with a mortality of 87 per cent, was not greater than in types I, II and IV, with approximately 18 per cent mortality. An investigation of the liver function in a heterogeneous group of infectious diseases revealed either minimal alterations of liver function, as contrasted with the group of pneumonias, or none at all. This is taken to indicate that fever or infection, in themselves, are not sufficient to alter liver function markedly; rather, that the changes found in the pneumococcus pneumonias are probably due to an accompanying toxemia which has a specific affinity for the liver. Significant alterations of liver function were not found in cases of advanced pulmonary tuberculosis, indicating that structural injury of the lungs is not alone responsible for the changes found in the group of pneumonias.

Effect of Epinephrine on Foodstuffs.—Experiments made by Krantz and Means tend to show that obese individuals have less glycogen and more fat available for metabolism. When a metabolic stimulant, such as epinephrine, is given, the most readily available foodstuff is oxidized; and in the case of the obese individuals, this available food is fat.

Excretion of Proteins in Nephritis.—Whether the nature of the protein mixture excreted in the different types of nephritis is related to the type and severity of the disease was the subject of a study by Hiller et al. The albumin: globulin ratio of the urine proteins was found usually above 10 in nephrosis; between 5 and 10 in acute nephritis, with a low ratio during the early stage followed by a higher ratio during recovery, and usually below 5 in the advanced stages of chronic glomerular nephritis, with urea retention and impaired kidney function. In one case of amyloid nephrosis the ratio was very low, 1.5, in accord with the previous publications. The low ratios in advanced chronic

nephritis were associated with low urea concentration indexes and poor prognoses. Of fifteen patients observed with average urinary albumin: globulin ratios below 5, all but two died in less than eighteen months, and these two have shown progressive decrease in renal function.

Lactic Acid and Circulatory Failure.—Meakins and Long found that severe circulatory failure is accompanied by an increased rise in the level of the resting lactic acid in the blood. This accumulation of lactic acid in the blood is in proportion to the severity of the circulatory failure.

Normal Blood Urea Concentration.—The MacKays assert that in general the blood urea concentration has a tendency to fall during the night, only to rise again during the following day. Certain results, although not conclusive, suggest that there is a tendency for the blood urea concentration to increase with age.

Journal of Comparative Psychology, Baltimore

7: 237-284 (June) 1927

Reactions of Snakes to Light and Touch: White Light. A. M. Reese, Morgantown.—p. 237.
Reproductive Behavior of Guinea-Pig: I. Normal Mating Behavior. C. M. Louttit, New Haven, Conn.—p. 247.
Differentiation of Emotional Responses in Infants. M. Sherman, Chicago.—p. 265.

Journal of Immunology, Baltimore

13: 319-383 (May) 1927

Relation of Anaphylaxis to Immunity: III. Specificity of Fixed Tissue Antianaphylatoxic Immunity Factor. W. H. Manwaring, H. D. Marino, T. C. McCleave and T. H. Boone, San Francisco.—p. 319.
Factors Governing Production of Diphtheria Toxin in Artificial Culture Mediums. C. S. Gibbs and L. F. Rettger, New Haven, Conn.—p. 323.
*Skin and Mucous Membrane Reactions in Hay-Fever. L. B. Baldwin, New York.—p. 345.
Relation of Anaphylaxis to Immunity: IV. Normal and Anaphylactic Detoxication of Specific Foreign Proteins. W. H. Manwaring, D. H. Marino, T. C. McCleave and T. H. Boone, San Francisco.—p. 357.
Results from Use of Blood Clot Method of Immunization. J. F. Anderson and G. F. Leonard, New Brunswick, N. J.—p. 365.
Antigenic Properties and Virulence Among Mammalian Tubercle Bacilli. S. Mudd and J. Fürth, Philadelphia.—p. 369.

Skin and Mucous Membrane Reactions in Hay-Fever.—Routine skin tests were performed by Baldwin over a period of from two to four years in thirty-six individuals who had either a unilateral or bilateral inheritance of hay-fever. One person gave a positive skin reaction without clinical signs of hypersensitiveness, and five developed positive skin reactions while under observation and also contracted hay-fever. The skin reaction was negative at the onset of hay-fever in one case, but became positive the following season. It was less intense the first season of hay-fever, and became more intense the following season in another case. In the other three cases the skin reactions became positive shortly before or during the onset of hay-fever, and have not varied since. A correlation could not be made in these five cases between the intensity of the skin reaction and the mucous membrane sensitivity. Pollen extracts were successfully used to test for mucous membrane sensitivity in these six cases.

Journal of Industrial Hygiene, Baltimore

9: 169-216 (May) 1927

*Acute Respiratory Infections Among Motormen and Conductors. H. S. Diehl, M. Connelly and D. D. Turnacliff, Minneapolis.—p. 169.
Cardiac Patient in Industry. H. E. Mock and S. P. Moore, Chicago.—p. 176.
*Metal Fume Fever: III. Effects of Inhaling Magnesium Oxide Fume. P. Drinker, R. M. Thomson and J. L. Finn, Boston.—p. 187.
*Basophilic Material in Benzene Poisoning. W. D. Paul, A. Friedlander and C. P. McCord, Cincinnati.—p. 193.

Acute Respiratory Infections Among Street Car Men.—A study covering a six year period was made by Diehl et al. of the incidence of acute respiratory infections among motormen and conductors employed by a large street railway company. During this period the conductors lost more time from the so-called acute cold than did the motormen. The greater loss of time by conductors was due chiefly to a large number of conductors having colds, although they also showed more repeated infections and a slightly greater average loss of time from each infection. Of the many factors which have been suggested as contributory in the development of colds, the greater exposure to the public seems to be the only one in which there would be a marked difference between a group of motormen and a group of conductors. The acute contagious diseases attacked more motormen than conductors during this period, which would seem to indicate that most of these infections were contracted when the men were off duty.

Metal Fume Fever.—Instances of febrile reactions analogous to those caused by breathing freshly generated zinc oxide fumes are reviewed by Drinker et al. The substances mentioned include zinc oxide powder, copper (oxide?), sprays of compounds of silver, mercury, iron, cobalt and antimony, and fumes from burned cadmium. It is probable that the fumes from the burning of iron, nickel and aluminum in the electric arc would also cause the same general type of febrile reaction. It was found that the inhalation of mild doses of magnesium oxide (a fume product of a light metal generated by burning magnesium ribbon) produces a leukocytosis and a fever resembling those caused by the heavy metals. Although magnesium oxide produces fume fever much less readily than does zinc oxide, it is believed that severer doses than those taken in these experiments would result in severer reactions.

Basophilic Material in Benzene Poisoning.—The presence of basophilic material in red blood cells in quantities exceeding normal is reported by Paul et al. in animals (cats, rabbits and guinea-pigs) to which benzene has been administered. Animal experiments without benzene administration, but with bleeding, afford some evidence that this basophilic material is associated with regeneration of the red blood cells. Results of examinations of the blood in a number of cases of benzene poisoning, too few to warrant any conclusions, suggest that basophilic substance in quantities above normal occurs in the blood of human beings affected by benzene.

Jour. Pharmacol. & Exper. Therap., Baltimore

31: 87-199 (June) 1927

Chemotherapy in Bacterial Infections: II. Relation Between Chemical Constitution and Chemotherapeutic Action in Staphylococcic Infections. E. L. Walker and M. A. Sweeney, San Francisco.—p. 87.
Rat-Poisoning Substance in Red Squills. F. R. Winton, London.—p. 123.
Contrast Between Actions of Red and White Squills. F. R. Winton, London.—p. 137.
Electrocardiographic Studies of Action of Alpha Lobelin and Epinephrine on Mammalian Heart. R. W. Whitehead and D. C. Elliott, Boulder, Denver.—p. 145.
*Fate of Morphine Which Has Been Injected into Animal Body. Y. Teruuchi and S. Kai, Tokyo, Japan.—p. 177.

Fate of Injected Morphine.—Teruuchi and Kai conclude that morphinism is due to the acquired power of the living organism to destroy morphine and to excrete it, besides the augmented power to reserve it in a large amount by the muscles, so that even though a large amount of it should be introduced into the body all at once, it can be prevented from immediately attacking the central nervous system.

Kentucky Medical Journal, Bowling Green

25: 183-254 (May) 1927

Puerperal Convulsions. G. G. Thornton, Lebanon.—p. 185.
Treatment of Psychoneurotic. J. J. Moren, Louisville.—p. 190.
Cesarean Section: Low Operation. S. D. Breckinridge, Lexington.—p. 194.
Hypertension. B. S. Rutherford, Bowling Green.—p. 198.
Appendicitis in Children. C. A. Vance, Lexington.—p. 201.
Anesthetic of Choice in Obstetrics. J. T. Reddick, Paducah.—p. 205.
Glaucoma. T. L. Bailey, Madisonville.—p. 209.
Calculus Anuria. J. Bate, Louisville.—p. 211.
Blood Stream Infection: Rôle Played by Pneumococcus. F. L. Koontz, Louisville.—p. 219.
Carcinoma of Thyroid. J. P. Keith and D. Y. Keith, Louisville.—p. 226.
Etiology of Exophthalmic Goiter. W. E. Gardner, Louisville.—p. 227.
Pathology of Thyroid. F. P. Strickler, Louisville.—p. 229.
Hypothyroid States. C. Pope, Louisville.—p. 232.
Hyperthyroidia. W. F. Boggess, Louisville.—p. 237.
Goiter: Prophylaxis. J. R. Morrison, Louisville.—p. 239.
Id.: Surgical Treatment. J. R. Wathen, Louisville.—p. 242.
Id.: Medical Treatment. J. M. Morris, Louisville.—p. 243.

25: 255-332 (June) 1927

Gallbladder Surgery. L. W. Frank, Louisville.—p. 257.
Serums and Vaccines. R. E. Smith, Henderson.—p. 261.
Massive Collapse of Lung. D. Y. Keith, J. P. Keith and J. C. Bell, Louisville.—p. 268.
Scarlet Fever: Etiology and Epidemiology. E. P. Whistler, Louisville—p. 273.
Id.: Symptoms, Types and Complications. J. S. Lutz, Louisville.—p. 274.

Id.: Prevention and Treatment. J. W. Bruce, Louisville.—p. 276.
Value of External Examination in Connection with General Diseases. J. H. Simpson, Louisville.—p. 280.
Granuloma Fungoides: Case. J. C. Bell, Louisville.—p. 283.
Vesicovaginal Fistula: Three Cases. J. W. Price and R. G. Spurling, Louisville.—p. 286.
Septicemia Complicating Acute Bilateral Mastoiditis. A. L. Bass, Louisville.—p. 289.
Ménière's Disease: Case. M. C. Baker, Louisville.—p. 291.
Surgical Treatment of Duodenal Ulcer. M. J. Henry, Louisville.—p. 293.
Gallbladder Visualization. H. C. Herrman, Louisville.—p. 298.
Fatal Hemorrhage from Stomach and Bowels Following Appendectomy. A. D. Willmoth, Louisville.—p. 301.
Acute Coronary Occlusion. E. F. Horine, Louisville.—p. 304.
Unsolved Problems of Otolaryngology. J. Peabody, Louisville.—p. 309.
Treatment of Syphilis. B. W. Whitfield, Harlan.—p. 320.
Backache. J. E. Goldthwait, Boston.—p. 324.
Abscess About Rectum. H. A. Gilliam, Bardwell.—p. 326.

Medical Journal and Record, New York

125: 653-720 (May 18) 1927

Birth Control Movement. R. L. Dickinson, New York.—p. 653.
Library Researches in Physical Therapy. G. B. Lake, Chicago.—p. 657.
Tonsil Electrocoagulation (Diathermy). G. A. Dillinger, Pittsburgh.—p. 659.
Deafness as Clinical Clue. A. Roth, New York.—p. 662.
Correction of Nasal Disfigurements by Readjustment of Nasal Tissues. J. E. Sheehan, New York.—p. 664.
Thermometer in Bladder. L. Nagorsky, New York.—p. 666.
Case of Neurosyphilis. G. B. Desparois, Los Angeles.—p. 667.
Cancer: XVI. Predisposition. W. Meyer, New York.—p. 668.
Backache. J. W. Shuman, Los Angeles.—p. 671.
Treatment of Hernia by Subcutaneous Injection. I. Mayer, Detroit.—p. 672.
Medical Phases of Child Behavior. I. S. Wile, New York.—p. 674.
Treatment of Fractures in Surgical Clinic. L. M. Jacobs, Philadelphia.—p. 675.

125: 721-788 (June 1) 1927

Conservative Treatment of Chronic Otitis Media Purulenta. J. Horn, New York.—p. 721.
Deafened Child in Elementary Schools: Economic and Educational Aspects. H. Hays, New York.—p. 723.
Causes of Failure of Specific Vaccine Treatment and Their Correction. M. Solis-Cohen, Philadelphia.—p. 727.
*Simple Determination of Blood Sugar. M. Adler, Carlsbad, Czechoslovakia.—p. 730.
Early Mobilization in "Tennis Leg." F. Christopher, Winnetka, Ill.—p. 731.
Cancer: XVII. Predisposition: Modern Civilization as Factor. W. Meyer, New York.—p. 732. C'td.
Mastoid Phobia. G. B. McAuliffe, New York.—p. 735.
Vogue of Quackery. A. W. Meyer, Stanford University, Calif.—p. 736.
Therapeutic Uses of Radium Emanation: Cervical Cancer. J. Muir, New York.—p. 739.
Cycles of Thought in Biologic Science: III. Teleology and Heredity. J. Wright, Pleasantville, N. Y.—p. 741.
Complete Prolapse of Rectum. C. J. Drueck, Chicago.—p. 747.
Two Cases of Intestinal Obstruction. R. A. Leonardo, Rochester, N. Y.—p. 750.
Chronic Appendicitis with Upper Abdominal Symptoms. S. L. Immerman, Philadelphia.—p. 753.
Rational Diet in Typhoid. A. Jarotzky, Moscow.—p. 756.
Stomach Ache (Right Upper Quadrant). J. W. Shuman, Los Angeles.—p. 759.
Composite American Dietary. J. Aulde, Philadelphia.—p. 760.

Determination of Blood Sugar.—The new standard Fehling solution used by Adler is prepared by taking copper sulphate solution and alkaline sodium tartrate solution in equal amounts, say 5 cc. of each, and pouring them into a graduated cylinder (100 cc.). To this mixture is added 89 cc. of an approximately 10 per cent solution of potassium hydroxide, in which 10 Gm. of potassium chloride has been dissolved by careful heating, and which contains 1 cc. of a 5 per cent solution of potassium ferrocyanide. This total of 100 cc. forms a modified one-tenth Fehling solution. By adding 400 cc. of distilled water, half a liter of fiftieth-normal solution is obtained, which represents Adler's new standard solution. About 2 Gm. of purest anhydrous dextrose is dissolved in 10 cc. of distilled water; 2 cc. of this solution is placed in a small porcelain dish of from 7 to 8 cm. diameter and about 20 c. of distilled water is added. This solution is then heated quietly over a slow burner. From a buret of 10 cc. capacity, in which each cubic centimeter is subdivided into tenths, and conveniently arranged over the dish, the standard solution is run drop by drop into the dish at intervals of a few seconds until the first drop develops quite a slight bluish tinge, which becomes more distinct when the liquid cools for about a minute or two. The number of cubic centimeters of the standard solution needed is marked and the calculation is made as follows: The two cubic centimeters of the sugar solution may contain 4 mg. of sugar; the complete reduction of the copper may have required 19.6 cc. of the standard solution; therefore, 1 cc. of the standard solution equals 0.203 mg. of sugar.

New York State Journal of Medicine, New York

27: 583-640 (June 1) 1927

Thoracic Surgery. C. Eggers, New York.—p. 587.
Relation of Upper and Lower Respiratory Tract Diseases. M. E. Newman, Buffalo.—p. 592.
*Penetrating Gastric Ulcer. H. A. Rafsky, New York.—p. 593.
Postoperative Parathyroid Tetany Controlled by Use of Collip's Parathyroid Hormone. A. H. Noehren, Buffalo.—p. 596.
Maimonides' Treatise on Hemorrhoids. L. J. Bragman, Syracuse.—p. 598.
Early Manifestations of Coronary Disease. D. Greenberg, New York.—p. 601.
Kahn Test for Syphilis Compared with Wassermann Test. R. J. Shafer, Corning, New York.—p. 605.

Penetrating Gastric Ulcer.—In the two cases reported by Rafsky the illness in one was of ten days' duration and in the other, fourteen days. Both of these patients were emphatic in their assertions that they never had any gastric disturbances prior to this.

Public Health Reports, Washington, D. C.

42: 1355-1416 (May 20) 1927

*Iodization of Public Water Supplies for Prevention of Endemic Goiter. R. Olesen, Cincinnati.—p. 1355.
*Malaria Among Mexican Cotton Pickers Imported into Mississippi. M. A. Barber, Memphis, Tenn., and C. P. Coogle, Greenwood, Miss.—p. 1368.

42: 1417-1487 (May 27) 1927

Public Health Organization of Denmark. T. Parran, Jr., Washington, D. C.—p. 1417.

Iodization of Water to Prevent Goiter.—The iodization of public water supplies, in its present state of development, is not recommended by Olesen for widespread adoption. However, the measure appears to be theoretically sound and promising as a means of reducing goiter incidence when correctly used. The chief points in its favor are its comparatively low per capita cost, its apparent harmlessness even to existing goiters, and its wide range of applicability. The need for more precise experimental work, and comprehensive control experiments with careful and repeated thyroid examinations, is emphasized.

Malaria Among Mexican Laborers.—The danger of malaria among temporary laborers, although varying greatly with localities and seasons, Barber and Coogle state, exists in sufficient amount to warrant attention. With the increasing scarcity of labor, it should prove of financial advantage to employers to protect imported labor against malaria.

Rhode Island Medical Journal, Providence

10: 81-96 (June) 1927

Conservation of Eyesight. H. C. Messinger, Providence.—p. 81.
Autonephrectomy. V. J. Oddo, Providence.—p. 82.
Surgical Indications of Inflammatory Diseases of Gallbladder. A. P. Heineck, Chicago.—p. 87.

U. S. Veterans' Bureau Med. Bull., Washington, D. C.

3: 409-523 (May) 1927

Late Results of Fractures of Long Bones. J. B. Walker.—p. 409.
Treatment of Neuropsychiatric Claimant. J. A. Pringle.—p. 428.
Value of Honesty and Sincerity in Treatment of Paranoid Praecoxes. H. L. Flowers.—p. 434.
Psychotic Heredity of Psychotics. C. L. Whitmire.—p. 439.
Tuberculous Meningitis. G. C. Daniel.—p. 448.
Importance of Proper History Taking in Tuberculosis Hospitals. C. E. Starns.—p. 450.
Tuberculous Patient as Surgical Risk. J. D. Brooks and C. E. Yount.—p. 453.
Ultraviolet Radiation and Diathermy in Treatment of Ear Conditions. C. Bates.—p. 456.
Medical Social Service in Hospitals. F. N. Gordon.—p. 460.
End of Medical Curiosity: Case. J. G. Cullins.—p. 463.
Necessity for Closer Cooperation Between Medical and Dental Examiners as Relating to Oral Infection. S. H. Campbell.—p. 466.
Amebic Abscess of Liver with Rupture into Lung. H. R. Lipscomb.—p. 468.
Simulated Mastoiditis Relieved by Sphenoidectomy: Three Cases. P. H. Finot.—p. 472.
Development of High Standards of Nursing in U. S. Veterans' Bureau. M. A. Hickey.—p. 494.
Occupational Therapy. D. M. Gardner.—p. 500.
Physiotherapy from Nurse's Standpoint. M. K. Dawson.—p. 503.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Anesthesia, Manchester

4: 178-220 (April) 1927

Pioneers of Modern Anesthesia. J. F. W. Silk.—p. 178.
Emergencies in Anesthetics. C. T. W. Hirsch.—p. 182.
*Temperature Variations During General Anesthesia. K. H. Watkins and S. R. Wilson.—p. 201.
*Anesthetic Fatality. G. F. R. Smith.—p. 207.
Brachial Plexus Block. E. M. Livingston and H. Wertheim.—p. 209.

Temperature Variation During Anesthesia.—Watkins and Wilson assert that there are usually two phases in the temperature change in a patient under ether anesthesia, the rate of the fall of the temperature being greater during the first phase. The temperature usually begins to fall in from five to eight minutes after the administration of ether has been started. The rate of the fall of the temperature increases with a light anesthesia, and decreases with a deep anesthesia. Pyrexial patients, or patients suffering from an acute condition, show a steady rise of temperature in the later stages.

Anesthetic Fatality.—The point of interest in Smith's case was a sighing respiration called forth by epinephrine and ventricular fibrillation, which has not been noted previously in the human subject.

British Medical Journal, London

1: 823-862 (May 7) 1927

Constitutional Factor in Disease. A. F. Hurst.—p. 823.
*Tuberculin: Is It Specific? F. G. Griffiths.—p. 827.
*Peptoned Serum Agar in Asthma. A. G. Auld.—p. 829.
Treatment of Diabetics as Hospital Outpatients. C. J. C. Earl.—p. 831.
*Severe Case of Hypoglycemia. H. C. Barlow.—p. 833.
*Rupture of Heart. J. S. Goodall and H. B. Weir.—p. 834.
Case of Guanmatous Colitis. R. Maingot.—p. 835.
Ileus Due to Impaction of Fig. R. Chalmers.—p. 836.
*Diagnosis of Gangrene of Small Intestine. B. W. Rycroft.—p. 836.

Specificity of Tuberculin.—Griffiths presents evidence in support of the view that tuberculin is specific in diagnosis and in treatment.

Peptoned Serum Agar in Asthma.—Auld injects up to 3.5 cc. of a 5 per cent peptone solution intravenously in asthma cases as often as indicated up to sixteen times. He reports good results and no untoward reactions.

Severe Hypoglycemia.—Barlow reports that the urine of his patient, aged 16, was "full of sugar," and that "the house reeked with the smell of acetone." He was given insulin. At the end of seventy-eight hours he had received 730 units of insulin with glucose. He suddenly began to "look strange," and was found lying on his back, with the color good and the eyes closed. The pulse was full and slow, and he did not show any sign of consciousness. Suddenly he uttered a long cry, the face twitched, and spasms began round the mouth, spreading to the other facial muscles and finally becoming general, ending in complete tonus and opisthotonos. He stopped breathing, frothed at the mouth, and became very blue. Artificial respiration was resorted to and maintained for ten minutes; 2 ounces of urine was drawn off and found to be sugar free. A sterile solution of glucose (15 Gm. in 100 cc.) was run into the median basilic vein. After this he breathed naturally and spasm ceased. He was still deeply unconscious, and 15 Gm. more of glucose was run in. He regained consciousness rapidly. No further convulsions occurred. Eventually, he went out of the hospital sugar free without insulin on a diet of nine lines of Lawrence's "line ration" scheme. He was gaining weight and feeling well.

Rupture of Heart.—Goodall and Weir analyzed eighteen cases. Twelve of these cases were in men and two in women; the average age of the men was 69 and of the women 69.5. Two of these patients died in bed; three died after definite exertion, and nine died after no apparent special effort. As regards the site of the rupture, in eight cases there was rupture of the anterior wall of the left ventricle; in three cases the rupture was in the posterior wall of the left ventricle, while in two cases the right ventricle was ruptured. In every case the coronary arteries were calcified, while in four cases a definite obstruction existed; in one case antemortem clot was present. There was no history of previous heart disease in the men, except pains in the chest in five cases, two of which dated back only three and six days, respectively.

Gangrene of Small Intestine.—In Rycroft's case there was fecal vomiting with persistent passage of flatus and absence of distention. When the abdomen was opened, much foul-smelling fluid gushed out, and an almost complete gangrene of the small intestine was found from blockage of the superior mesenteric artery.

Journal of Tropical Medicine and Hygiene, London

30: 97-112 (April 16) 1927

Tropical Lacunae. A. Balfour.—p. 97.
Diagnosis of Liver Abscess. P. Manson-Bahr.—p. 106.

30: 113-124 (May 2) 1927

Etiology and Prophylaxis of Mental Irritability in Europeans in Tropics. M. Carthew.—p. 113.
Incidence of Amebic and Helminthic Infections in Kano and Katsina Cities, Northern Nigeria. W. E. McCulloch.—p. 117.

30: 125-132 (May 16) 1927

*Infection with Nonmotile Strain of B. Typhosus in Person Previously Inoculated with T.A.B. Vaccine. R. G. Archibald.—p. 125.
Chronic Bronchospirochetosis with Acute Exacerbation. R. W. Mendelson.—p. 126.
Stovarsol in Treatment of Malaria. M. Freiman.—p. 127.
Normal Sexual Life. F. G. Cawston.—p. 128.

Infection with Nonmotile Typhoid Bacillus.—The organism isolated by Archibald by hemoculture and also by stool culture gave all the biochemical reactions of *B. typhosus;* showed a specific agglutination with *B. typhosus* serum in a dilution of 1:5,000 (titer 1:10,000), and failed to agglutinate with other specific serums, including those of the dysentery group. It differed from the usual *B. typhosus* strain by reason of its nonmotility. Numerous cultures of the bacillus on various mediums at different stages of growth were examined repeatedly with negative results as regards evidence of motility. Moreover, smear preparations stained by special methods failed to demonstrate the presence of flagella; it appears reasonable to infer that the organism was an unusual strain of *B. typhosus.* Clinically, the case was of interest in view of the absence of the symptoms usually associated with an enteric infection; previous and recent inoculation with T. A. B. vaccine may have been responsible for masking the symptoms.

Lancet, London

1: 1061-1114 (May 21) 1927

Diverticula of Alimentary Canal. B. Moynihan.—p. 1061.
*Multiple Diverticula of Colon. E. I. Spriggs and O. A. Marxer.—p. 1067.
*Causes of Blindness Among Pupils of School for Blind, Swiss Cottage. A. H. Thompson.—p. 1075.
Cor Triloculare Biatria. E. F. W. McCrea.—p. 1077.
Squamous-Celled Epithelioma of Bronchus Illustrating Lymphatic Permeation. D. M. B. Evans.—p. 1077.
Giddiness in Neurasthenia. H. M. Walker.—p. 1078.

Diverticulosis of Colon.—Some stage of diverticulosis of the large intestine was found by Spriggs and Marxer in 10 per cent of 1,000 consecutive patients in whom a roentgen-ray examination of the alimentary canal was made, two men being affected to one woman. Since half the individuals with small diverticula of the colon do not suffer any inconvenience therefrom, Marxer thinks that they are probably present in a not inconsiderable proportion of the general population over 50 years of age. The condition has been described in children, but is rare; the youngest patient in this series was 25. One hundred and sixty-six consecutive cases are analyzed. The pelvic colon was affected in 120 cases; the descending colon in seventy-nine; the ascending and transverse colon, in thirty-three cases each and the whole colon in twenty-four cases.

Etiology of Blindness.—Two hundred and fifty-five blind persons, mostly under 25 years of age, were seen by Thompson. Ophthalmia neonatorum was the cause in fifty-seven cases; optic atrophy in thirty-seven; syphilis in thirty; congenital cataract in thirty-one; congenital causes other than cataract in thirty-four; disease in thirty-seven; accidents in eight and myopia in twenty-one. Venereal diseases in the parents was the cause of the blindness in eighty cases.

Royal Soc. of Trop. Med. & Hygiene Trans., London

20: 487-558 (April 27) 1927

Old-Time Typhus in Britain. MacArthur.—p. 487.
Sodoku from Cat Bite in British Guiana. G. Giglioli.—p. 504.
Origin of Yaws in Assam. G. C. Ramsay.—p. 506.
*Serum-Formaldehyde Reaction in Leprosy. W. K. Dunscombe.—p. 512.
Loa Loa Infection in Central Equatorial Africa. G. C. Low.—p. 514.
*Rationale of Intravenous Hypertonic Saline Injections in Treatment of Cholera. J. W. Tomb and G. W. Thompson.—p. 516.
*Criticism of Hypertonic Salines in Treatment of Cholera. L. Rogers.—p. 522.
Relapsing Fever in Anglo-Egyptian Sudan. D. Riding and T. W. Macdowell.—p. 524.
Yellow Fever in Lagos, Nigeria, During 1926. A. B. Aitken and E. C. Smith.—p. 530.
Periappendicular Abscess in Muganda in Entebbe Civil Hospital: Case. S. Forrest.—p. 552.
*Relation of Yaws and Goundou. C. C. Chesterman.—p. 554.

Serum-Formaldehyde Reaction in Leprosy.—The results of the serum-formaldehyde reaction in thirty-eight cases of leprosy are given by Dunscombe. The test is regarded as being unreliable as a possible method of diagnosis, or prognosis, in cases of leprosy.

Opium and Saline Injections in Cholera.—Tomb and Thompson regard the teaching of Rogers that opium is contraindicated in the early stages of cholera, and that an expectant policy of "wait and see" should be adopted until collapse has manifested itself and saline injections become imperative, as both harmful and erroneous. From the carefully compiled records of hundreds of cases of cholera treated by various methods over the last five years, it has been abundantly and indisputably proved that treatment solely by carminative "cholera mixtures," generally containing some preparation of opium, is of great and unquestionable value, the mortality rate in cases of all degrees of severity, including a majority of cases already collapsed, treated by such mixtures being approximately 50 per cent, as compared with a constant annual mortality rate of approximately 90 per cent in wholly untreated cases.

Salines in Cholera.—In reply to Tomb and Thompson, Rogers shows that the hypertonic salines alone gave a reduction of mortality of 45 per cent, and his fully developed system of treatment with the addition of permanganates and alkalis (the hypertonic salines being a most essential part) one of 65 per cent, so that deaths were reduced by almost two-thirds.

Relation of Yaws and Goundou.—Chesterman reports a case of goundou which strongly confirms the evidence that is accumulating in favor of this condition being only one of the many manifestations of tertiary yaws.

South African Med. Assoc. Journal, Cape Town

1: 157-184 (April 9) 1927

Hookworm Infection in Gold Mines of Witwatersrand. W. O. Fischer and A. J. Orenstein.—p. 158.
*Sequelae of Epidemic Encephalitis. M. J. Cohen.—p. 163.
*Manoiloff Reaction for Determination of Sex. W. Sachs.—p. 168.
Maternal Mortality. R. M. Woodbury.—p. 172.
Case of Hydrophobia(?). C. F. Krige.—p. 173.
*Disseminated Carcinomatosis. E. L. Dirmeik.—p. 174.
*Case of Syphilis in Child. A. Agranat.—p. 175.
Purpura Hemorrhagica. E. P. Baumann.—p. 175.

1: 185-212 (April 23) 1927

Biology. J. Luckhoff.—p. 186.
Management of Breech Presentations. G. O. Thornton.—p. 192.
Social Insurance. T. S. Higgins.—p. 196.
Pharmacology and Therapeutics: Teaching.—p. 200.
Prolonged Retention of Denture in Larynx. H. Bodkin.—p. 202.
Dimensional Differentiation of Certain Microbes. A. Pijper.—p. 203.

Postencephalitic Parkinsonism.—Twenty cases of postencephalitic parkinsonism are analyzed by Cohen. Three cases are noted in detail. All presented the parkinsonian syndrome. One instance is that of a child, aged 6 years, in whom the condition commenced three years previously, and who showed the flexor type of postencephalitic parkinsonism with excessive drooling of saliva. The second case is that of a young adult with the extensor type of the parkinsonian syndrome, and severe postencephalitic respiratory phenomena. The third is that of a diabetic adult in whom parkinsonism occurred at the outset of the disease, and in whom the diabetes was aggravated by the added condition. The most favorable treatment for the parkinsonian syndrome has been found to be tincture of belladonna in large doses, with scopolamine hydrobromide.

Manoiloff Test for Sex Determination.—Sachs regards this test as of little value at present from a medicolegal point of view owing to its inconsistency.

Disseminated Carcinomatosis.—In Dirmeik's case there were numerous nodules, varying from a pea to an almond in size, scattered about the neck, chest, abdomen and arms. Most were subcutaneous, some intramuscular, while others appeared to be attached to bone. The subcutaneous nodules were freely movable; all were stony hard, with an irregular surface. The submaxillary and cervical lymph glands on both sides were enlarged and stony hard in consistency. A primary growth was not found at the necropsy. There were carcinomatous nodules in the liver, kidneys, intestinal walls, heart muscle, glands along the lesser curvature of the stomach and mesenteric glands. There were firm pleural adhesions to the thoracic walls, diaphragm and pericardium, and the lungs were congested.

Syphilis in Child.—Agranat reports a direct infection with syphilis occurring in a 4 year old boy. He presented a typical penile chancre. He also had a gonococcal urethritis.

Arch. f. Japanische Chirurgie, Kyoto

4: 1-162 (March 20) 1927

*Ligation of Hepatic Artery: II. Y. Hori.—p. 1.
Distribution and Ending of Nonmedullated Nerves in Striated Muscles. N. Yamasaki.—p. 23.
*Double Kidney. K. Tatumi.—p. 33.
Influence of Sympathectomy on Radiosensibility. S. Uno.—p. 52.
*Closure of Duodenal Stump at Time of Stomach Resection. S. Kataoka.—p. 63.
Does Implantation of Omentum Into Kidney Induce Diuresis in Healthy Man and Animals? M. Hatakoski.—p. 99.
Action of Native and Boiled Filtrate of Culture on Immunizing Results of Common Typhoid Vaccine. I. Takamatsu.—p. 108.

Ligation of Hepatic Artery.—Hori asserts that nowhere can the hepatic artery be ligated with absolute safety for the liver. Ligation of the right or left terminal branch is the safest. Ligation proximal to the point where the gastroduodenal artery is given off is the second in safety. Ligation proximal to the superior pyloric artery is third in safety or second in danger. Ligation of the arteria hepatica propria is the most dangerous.

Double Kidney.—The left kidney in Tatumi's case was double, that is, two parts fused at the ends, an upper and a lower, the whole being twice the normal size. The upper portion was apparently normal. The lower portion was tuberculous. There were two ureters which united 3 cm. above the bladder.

Closure of Duodenal Stump.—Kataoka separates the mucosa, submucosa and circular muscle layers from the two outer coats of the duodenum. These three inner coats are tied and invaginated into the duodenal lumen. Then the two outer coats are sutured, in apposition, over the base of the invaginated portion.

National Medical Journal of China, Shanghai

13: 1-150 (Feb.) 1927

Classification of Causes of Death in China. J. B. Grant, T. F. Huang and S. C. Hsu.—p. 1.
Health Survey of Pinchiang. L. C. Swee and W. Lien-Teh.—p. 24.
Health Obligation of Mission Hospitals. K. H. Li.—p. 83.
Communicable Disease Information in China. T. F. Huang.—p. 92.
Problem of Venereal Diseases in China. W. Lien-Teh.—p. 109.

Sei-I-Kwai Medical Journal, Tokyo, Japan

46: 1-40 (April) 1927

Nitrogen Metabolism of Surviving Liver of Mammals Under Influence of Sympathetic and Parasympathetic Poisons and Amino-Acids. S. Nukariya.—p. 1.
Immunologic Studies on Fowl Sarcoma: I. H. Yoshikawa.—p. 37.
Blood Chemistry of Japanese. K. Nakasone.—p. 38.
Antidotal Action of Ash of Oyster's Shell for Viper's Poison. Y. Suzuki.—p. 39.

Annales de l'Institut Pasteur, Paris

41: 201-368 (March) 1927

*B C G Vaccine in Prevention of Tuberculosis in the New Born. A. Calmette et al.—p. 201.
*B C G Vaccine in Prevention of Tuberculosis in Cattle. C. Guérin et al.—p. 233.
B C G Vaccine in Prevention of Tuberculosis in Infants. B. Weill-Hallé and R. Turpin.—p. 254.
*B C G Vaccine in Prevention of Tuberculosis in Belgium. Malvoz and J. van Beneden.—p. 271.
B C G Vaccine in Prevention of Tuberculosis in Roumania. J. Cantacuzène.—p. 274.
B C G Vaccine in Prevention of Tuberculosis in Athens. G. Blanc.—p. 277.
B C G Vaccine in Prevention of Tuberculosis in Algeria. H. Rougebief.—p. 282.
B C G Vaccine in Prevention of Tuberculosis in Indo-China. N. Bernard.—p. 284.
*Elimination of B C G Vaccine Taken by the Mouth. Remlinger and Bailly.—p. 286.
Effect of B C G Vaccine Given by the Vein. E. Coulaud.—p. 289.
Phagocytosis and Destruction of Tubercle Bacilli. S. Metalnikov and V. Secreteva.—p. 301.
B C G Vaccine in Prevention of Tuberculosis in Italy. A. Ascoli.—p. 314.
B C G Vaccine in Prevention of Tuberculosis in Ukraine. Tzekhnovitzer.—p. 322.
The Technic for B C G Cultures.—p. 358.

Inoculation of New-Born Infants with B C G Vaccine in Prevention of Tuberculosis.—The paper contains a detailed study by Calmette in collaboration with Guérin, Nègre and Boquet. The statistics include 969 infants who were born from tuberculous mothers or had been in contact with a tuberculous person. They were inoculated with B C G vaccine. In France the average mortality from tuberculosis in infants is about 26 per cent. Among the vaccinated infants, for the two years following the vaccination, the mortality from tuberculosis was 1 per cent; it was nil after two years. The resistance to tuberculous reinfection lasted more than four years. Hence, with the B C G vaccine infants are immunized for the period during which tuberculous infection is most dangerous.

B C G Vaccine in Prevention of Tuberculosis in Cattle.—On a farm on which the cattle were infected with tuberculosis, all the calves were vaccinated with B C G vaccine within the first fifteen days of life. They were revaccinated every year. The usual prophylactic measures of isolation and disinfection were suspended. An injection of 0.05 Gm. of B C G vaccine was given subcutaneously. Of eighty-eight animals thus treated, twenty were born from tuberculous mothers and fed with the maternal milk for a few months. None of the animals contracted tuberculosis.

Immunization with B C G Vaccine in Belgium.—A service has been organized in Liége which prepares B C G and distributes it to physicians. Three hundred and eighty-six infants were vaccinated. Among them, one infant of the thirty-two who lived in contact with tuberculous persons died from presumed tuberculosis at the age of 3 months.

Innocuousness of B C G Vaccine Given by the Mouth; Its Elimination.—Twenty guinea-pigs, aged less than 10 days, were given a single dose of from 0.01 to 1 Gm. of B C G vaccine by the mouth. None of them developed tuberculous lesions. Acid-resisting bacilli appeared in the feces from two to ten days after ingestion of the vaccine. They disappeared from six to seventeen days later. The tuberculin reaction was still negative in all the animals seventy-four days after ingestion of the vaccine.

Bruxelles-Médical, Brussels

7: 586-617 (March 6) 1927

Assanation in Tropical Cities. J. J. Van Loghem.—p. 586.
*Anaphylactic Origin of Dermographia. B. Dujardin and N. Decamps.—p. 589.
Suppurative Fibromas. P. Nisot.—p. 593.
*Filtrable Tubercle Bacillus in Tuberculous Organs. P. Fabry.—p. 596.

Anaphylactic Origin of Dermographia.—In Dujardin and Decamps' opinion, dermographia and urticaria have a common pathogenesis; both are of anaphylactic origin. Dermographia is due to liberation of antigen in the skin by mechanical means. As long as the liver is normal, the amount of antigen carried to the skin is insufficient to produce any visible manifestations. In case of insufficiency of the liver, there is retention of the antigen in the skin: dermographia develops. Continued accumulation of antigen in the skin with increase of amboceptors brings about chronic skin lesions with a white line on tracing, which persists. The red and the white marks elicited by tracings represent various phases of the same anaphylactic condition.

Filtrable Form of Tubercle Bacillus in Tuberculous Organs.—Fabry inoculated a guinea-pig with a filtrate prepared from a fragment of human tuberculous lung. The animal died before the end of the month. Acid-resisting bacilli analogous to the tubercle bacilli were found in the enlarged glands and in the spleen. A fluid obtained from these organs was injected into a guinea-pig. The animal died forty-four days later. Necropsy revealed the presence of generalized tuberculosis. The fact that filtrable tubercle bacilli are found in tuberculous organs and in sputum (Valtis) may change many of the theories of contagion in tuberculosis.

Bulletin de l'Académie de Médecine, Paris

97: 625-706 (May 24) 1927

*Habitual Vomiting in Infants. A. B. Marfan.—p. 639.
Education in Sex Relations. R. Martial.—p. 642.
Physicochemical Study of St. Honoré-les-Bains Mineral Waters. G. Achard and P. Blum.—p. 645.
Physicochemical Study of Bourbon-Lancy Mineral Waters. G. Achard and P. Blum.—p. 647.

Pathogenesis of Habitual Vomi[illegible]n Marfan's opinion, repeated or habitual vom[illegible]nfants does not depend on the kind of food. It occurs in breast fed infants as well as in infants given cow's milk. The vomiting begins within the first two months of life. Sometimes it takes place immediately after the meal, sometimes an hour or more later. The disease persists for weeks or months. During exacerbation, constipation is present; at other times, the stools are normal, or there is slight diarrhea. Marasmus may develop and frequently ends in death. The disease is not caused by organic stenosis of the pylorus or by lesions of the stomach. In most cases congenital syphilis is a factor, and the majority of patients, the author says, are rapidly cured by antisyphilitic treatment. The theory is that the vomiting is caused by syphilitic lesions in the vomiting center, situated in the pneumogastric nucleus of the medulla oblongata.

Bulletins de la Société Médicale des Hôpitaux, Paris

51: 675-738 (May 26) 1927

Mechanical Prophylaxis in Tuberculosis. C. Zoeller.—p. 675.
Cases of Nonhereditary and Nonfamilial Craniofacial Dysostosis. Roubinovitch et al.—p. 676.
Malignant Granulomatosis of the Sternum. Lortat-Jacob et al.—p. 681.
Painful Lipomatosis and Dercum's Disease. M. Labbé and R. Boulin.—p. 687.
Angina Pectoris and Gout. E. Doumer.—p. 695.
Acidosis and Uncontrollable Vomiting in Pregnancy. M. Labbé.—p. 702.
*Splenomegalia of Mycotic Origin. P. Emile-Weil et al.—p. 713.
Does Vaccine Treatment of Bronchopneumonia Avert Empyema? d'Oelsnitz and G. Bonnet.—p. 718.
Cases of Bronchiectasis Simulating Mediastinal Pleurisy. E. Rist et al.—p. 724.
Study of Spirochetal Pulmonary Gangrene of Chronic Course. F. Bezançon et al.—p. 728.

Seven Cases of Splenomegalia Caused by Aspergillus.—Emile-Weil, Grégoire and Flandrin noted the presence of a fungus in seven of sixteen cases of primary splenomegalia. On cultivation, the fungus appeared to be of the Aspergillus species. Five of the patients were between 15 and 24 years of age, two were 50 years old. In two instances, the patients were women. The authors give a detailed study of the macroscopic and histologic lesions; they were similar to those described by Nanta. The clinical aspect of the disease varies. Banti's syndrome was present in three cases. In two, considerable enlargement of the spleen was accompanied by hemolytic jaundice; in two, lesions of the spleen existed alone. Six patients presented hematemesis and melena, often of the recurring type. The changes in the blood were characteristic of chronic anemia. The course of splenic mycosis is very slow; the disease ends in death in from six to ten years. Involvement of the liver with consequent ascites hastens the fatal issue. Treatment consists in removal of the spleen before cirrhosis of the liver sets in. One of the patients operated on two years ago is now entirely well; she has gained 26 Kg. in weight. The other operations were recent.

Comptes Rendus de la Société de Biologie, Paris

96: 501-580 (March 4) 1927. Partial Index

*Vaccination Against Dysentery with Living Bacilli. G. Blanc and J. Caminopetros.—p. 509.
*Property Induced in Bacteria of Lyzing Red Corpuscles. I. Schiller.—p. 511.
Reciprocal Action of Syphilitic Serums. R. Douris.—p. 515.
*Contraction of the Spleen and Polycythemia from Epinephrine and Furze. L. Binet et al.—p. 521.
*The p_H in Malignant Tumors and in Embryos. E. Harde and P. Henri.—p. 535.
Histologic and Chemical Researches on "Ciaccio's" Cells. S. Baginski.—p. 537.
Lytic Action of Ultraviolet Rays on Isotonic Solutions of Platelets. J. Cluzet and T. Kofman.—p. 539.
*Epinephrine of the Suprarenals in Vitamin C Deficiency. G. Mouriquand and A. Leulier.—p. 548.
*Carbon Dioxide Gas Baths. E. Kmietowicz.—p. 565.
Rôle of Carbohydrates in Fever of Peripheral Origin. J. Dadlez and W. Koskowski.—p. 576.

Vaccination with Living Shiga Bacilli Against Dysentery in Man.—Blanc and Caminopetros assert that living Shiga bacilli are not toxic for the human organism when they are cultivated in tubes free from condensation fluid. The technic is given. With their method, from four to six thousand millions of living bacilli were injected into the muscle or beneath the skin without provoking any appreciable local or general reaction. The results of the vaccination were satisfactory in children as in adults and the aged.

"Induced Antagonism" in Bacteria Against Red Corpuscles.—In his former experiments, Schiller succeeded in inducing in bacteria a lytic property against bacteria or yeasts. In his recent researches, the "antagonism" was induced in bacteria against red blood corpuscles. An emulsion of washed red corpuscles in a sodium chloride solution was used for cultures of anhemolytic streptococci isolated from the throat in healthy persons. Since this medium is deprived of a soluble nitrogen, the streptococci are forced to use the red corpuscles for their nourishment. The hemolysis occurs by means of a lytic substance secreted by the anhemolytic streptococcus. This is preceded by a marked agglutination.

Contraction of the Spleen and Polycythemia from Epinephrine and Furze.—Binet, Cardot and Fournier's experiments were conducted on the dog's spleen. Fragments of the organ were treated with epinephrine or with furze extract. These substances, which usually provoke an early and high grade polycythemia in vivo, caused considerable contraction of the spleen in vitro. Yohimbine suppresses both the polycythemia which they cause in vivo and contraction of the spleen which they excite in vitro.

The p_H in Malignant Tumors and in Embryos of Mice.—Rats with transplanted sarcoma, mice with spontaneous carcinoma and gravid mice were injected in the peritoneum with phenol red or with cresol red. On subsequent examination, the reaction in the tumors as well as in the embryonal tissues proved to be acid (the p_H was between 5.8 and 6.6). Harde and Henri consider these facts as proof that an acid medium may favor the growth of cells in vivo.

Epinephrine of the Suprarenals in Vitamin C Deficiency.—Mouriquand and Leulier conclude from their study on guinea-pigs that vitamin C deficiency does not bring about reduction of epinephrine in the suprarenals. Lesions from vitamin C deficiency appear to be limited to the cortical portion of the suprarenals, since cholesterol is found to be greatly reduced there.

Dry Carbon Dioxide Baths.—Carbon dioxide gas was introduced into empty bath tubs especially constructed for the purpose. The person to be examined entered the bath fully dressed. The tub was covered with a rubber sheet, placed tightly around the patient's neck. The bath was given at room temperature for from ten to twenty minutes. Capillaries that were previously invisible increased in size by from 15 to 20 per cent. Respiration became slower. The maximal blood pressure decreased by about 30 mm.; the minimal pressure remained apparently unchanged. The respiratory volume had increased from 80 liters to 103 liters at the end of ten minutes. Kmietowicz thinks that carbon dioxide gas baths may replace mineral water baths. The bath cubicles should be suitably ventilated.

Gynécologie et Obstétrique, Paris

15: 161-240 (March) 1927

*"Enervation" of the Ovary. J. Lhermitte and R. Dupont.—p. 161.
Implantation of the Fallopian Tube in the Uterus. G. Cotte and P. Bertrand.—p. 182.
Pregnancy After Radiotherapy for Uterine Hemorrhages. C. A. Castano.—p. 196.
Complications of Uterine Deformities. T. Mihailesco.—p. 205.

"Enervation" of the Ovary in Treatment of Ovarian Pain.—Lhermitte and Dupont report fifteen of their twenty cases in which painful sclerocystic ovary or pelvic neuralgia of ovarian origin was treated by severing the ovarian nerves. The operation was performed on one side in three patients, on both sides in twelve patients and was followed by disappearance of the pain. The results were better with the bilateral method. In most of the cases the neurectomy was associated with ligamentopexis or appendectomy. Recurrence did not take place. After the operation, the menses appeared normally; one of the women became pregnant. The operation is indicated in recent cases and in young women only. The technic, which consists in dividing the nerves in the ovarian hilum, is described. There are five illustrations.

Journal de Médecine de Bordeaux et du Sud-Ouest

104: 135-168 (Feb. 25) 1927. Partial Index

*Spinal Anesthesia in Treatment of Spastic Intestinal Obstruction. A. Chenut.—p. 140.
Massage of the Prostate. H. Blanc.—p. 143.

Spinal Anesthesia in Treatment of Postoperative Spastic Intestinal Obstruction.—A woman, aged 45, developed phenomena of intestinal obstruction following hysterectomy. On account of the coinciding bronchopneumonia, enterostomy appeared an extremely grave undertaking. Therefore, spinal anesthesia was tried. A preparation of cocaine was injected into the spinal canal between the second and third lumbar vertebrae. This resulted in the immediate discharge of gas and feces. The treatment was followed by purgation for a few days, and the patient recovered completely. The author warns that spinal anesthesia should be used only in cases in which tonic contraction of the intestine is responsible for the obstruction. In other cases, operation should be performed without delay.

Paris Médical

63: 472-500 (May 21) 1927

Diseases of the Liver, Pancreas and Spleen in 1927. E. Chabrol.—p. 473.
Indications for and Results of Cholecystogastrostomy. B. Cunéo.—p. 491.
Sulphur in the Liver and Sulphoconjugation. H. Flurin and A. Mathieu de Fossey.—p. 494.

63: 501-512 (May 28) 1927

Desensitization Therapy in Vomiting of Pregnancy. Lévy-Solal et al.—p. 501.
*Bouillon Vaccine in Treatment of Gonococcal Urethritis. Barbilian et al.—p. 506.
*Induced Anastomosis of Venous Systems in Treatment of Ascites. Krestowsky.—p. 511.

Local Treatment with Antivirus, in Cases of Gonococcal Urethritis.—Barbilian, Voscoboinic and Franke used a filtrate of gonococcus cultures in patients with gonococcal urethritis. The treatment was limited to recent cases in which the posterior urethra was not affected. After an irrigation from 5 to 10 cc. of the bouillon vaccine was slowly introduced into the anterior urethra. The injection was usually repeated twice or three times a day. From five to eight days later, when the urethral discharge was greatly reduced, the filtrate was injected into the posterior urethra. When cautiously done, the procedure proved to be harmless. Microscopic examinations of the urethral discharge were made every three days, and the treatment was discontinued when the gonococcus had disappeared completely from the sperm culture. In fourteen patients thus treated, clinical and biologic cure took place within from twelve to thirty days. By-effects were never observed.

Induced Anastomosis of the Portal Vein and Vena Cava in Ascites.—Krestowsky's patient, aged 24, presented cirrhosis of the liver with considerable ascites. At first 48 liters, then from 15 to 25 liters of the fluid were withdrawn every month. An operation was performed, at which the superior mesenteric vein was anastomosed with the inferior vena cava. This

resulted in reduction of the ascites to such an extent that in two months only 5 liters of the fluid were removed. It is expected that a collateral circulation will develop, by which the blood of the left half of the abdomen will be carried directly into the inferior vena cava. Accumulation of fluid in the abdominal cavity might then cease completely. The details of the operation are given.

Presse Médicale, Paris

35: 641-656 (May 21) 1927

Comparative Study of Serologic Methods. E. Techoueyres and Pillement.—p. 641.
Foreign Bodies in Respiratory and Digestive Tracts of Infants. J. Guisez.—p. 642.
*Pathogenesis of Epileptic Fits. A. Popea and G. Eustatziou.—p. 643.
Importance of Histologic Pathology in Diagnosis. M. Letulle.—p. 645.

Rôle of Vasoconstriction in the Pathogenesis of Epileptic Seizures.—Popea and Eustatziou report sixteen cases, in which epileptic patients were treated with inhalations of amyl nitrite. From 3 to 5 drops were poured on a compress and renewed at each inhalation. The inhalations suppressed the convulsions, or averted the seizures when given as soon as the first signs appeared. This action of a vasodilator substance, such as amyl nitrite, confirms the theory that vasoconstriction, i. e., the sympathetic system, plays a determining rôle in the pathogenesis of epilepsy.

35: 657-672 (May 25) 1927

*Study of Chronic Intestinal Stasis. M. Chiray and J. Lebon.—p. 657.
Technic for Fractures of the Inferior Maxilla. C. Lenormant and M. Darcissac.—p. 660.

35: 673-688 (May 28) 1927

Vulpian's Work. G. Catola.—p. 674.
Leeches in Treatment of Thrombotic Phlebitis. J. Mouzon.—p. 677.

A Study of Chronic Intestinal Stasis.—Chiray and Lebon's paper is devoted to a detailed study of this condition. The pathogenesis and clinical forms are discussed. The authors distinguish seven forms of the disease: the common, hepatobiliary, renal, gastric, respiratory, febrile and anemic.

Riforma Medica, Naples

43: 385-408 (April 25) 1927

*Pernicious Anemia in Chronic Amebiasis. G. Izar.—p. 385.
*Homoplastic Grafts of Endocrine Organs. G. Castiglioni.—p. 387.
Gastro-Intestinal Manifestations of Cholelithiasis. M. Mairano.—p. 388.
*Friction Sign in Cirrhosis of the Liver. P. Arsenio.—p. 396.
Vaccinotherapy of Infectious Diseases. T. Lucherini.—p. 404.

43: 409-432 (May 2) 1927

Scoliosis and Aortic Aneurysm. O. Nuzzi.—p. 409.
Orthocardiogram After Venous Stasis. E. Periti.—p. 413.
Pseudostrangulation of Hernia. V. Silvestrini.—p. 418.
Vaccine Treatment of Pulmonary Abscess. S. Livierato.—p. 420.
Mutilating Form of Leprosy. G. Crocco and S. Lottico.—p. 428.

Pernicious Anemia in Chronic Amebiasis.—Izar's patient developed all the signs of pernicious anemia within a few months after being infected with amebic dysentery. She improved under treatment of the basic disease.

Homoplastic Grafts of Endocrine Organs.—Castiglioni had better success with implants of ovaries and testes, when he injected an extract of the respective gland every other day after the implantation.

Friction Sign in Cirrhosis of the Liver.—Arsenio observed friction sounds between the eighth and eleventh ribs in the right middle axillary line in a patient with cirrhosis of the liver.

Rivista di Clinica Pediatrica, Florence

25: 289-360 (May 25) 1927

*The Blood in Tuberculosis. C. Cisi.—p. 289.
Congenital Atony and Fetal Muscular Dystrophies. G. Fiore.—p. 319.
Treatment of Congenital Umbilical Hernia. U. Trinci.—p. 338.
"Organovaccinotherapy" in Acute Infections. G. Taccone.—p. 348.

The Blood in Tuberculosis.—Cisi found an increase in neutrophils in the large majority of tuberculous children. The "shifting to the left" of Arneth's formula was more pronounced than in adults. Neutrophilia indicates a somewhat graver prognosis, eosinophilia a distinctly better outlook.

Archivos Brasileiros de Medicina, Rio de Janeiro

17: 143-250 (March) 1927

Pernicious Action of Plasmodia. M. Couto.—p. 143.
*Malaria and Neuropsychiatry. J. Moreira.—p. 146.
*Eye Symptoms in Malaria. Abreu Fialho.—p. 162.
Mental Disturbances in Malaria. H. Roxo.—p. 168.
Diagnosis of Malaria. I. Malagueta.—p. 177.
Treatment of Malaria. H. Duque.—p. 187.
Prognosis in Malaria. E. Coutinho.—p. 200.
Malarial Therapy of Neurosyphilis. W. Pires.—p. 213.
*Pathogenesis of the Malarial Paroxysm. H. Póvoa and W. Piza.—p. 224.

Nervous Manifestations in Malaria.—While nervous and mental manifestations are common in malaria, none, states Moreira, are characteristic of the disease. In order to diagnose their malarial origin the following data are needed: a clinical picture typical of a co-existent or previous malarial infection, exclusion of other causative factors, finding of the parasite in the blood and improvement under antimalarial treatment. Postmortem examination in cases of general paralysis, shortly after inoculation with malaria, showed histologic changes in the brain which suggest regression of the paralytic process. Malaria would thus seem to make the cortex more accessible to antisyphilitic treatment.

Eye Manifestations in Malaria.—In malarial patients treated with quinine, warns Abreu, disturbances caused by the drug must be clearly separated from those due to the disease. The eye is involved in hardly 20 per cent of patients with malaria. Abreu thinks he was the first to point out teichopsia as a symptom of malaria.

Pathogenesis of the Malarial Paroxysm.—The blood reaction to malaria was found to assume the same form in two nonparalytic patients as in five patients with general paralysis. When the paroxysm began, the maximum arterial pressure, the leukocyte count and the refractometric index underwent a sudden decrease. The lymphocytosis and mononucleosis continued until the height of the paroxysm was passed. The blood changes may be initiated by a sort of hemoclasia. In this case, the malarial paroxysm would become a shock started by the discharge of merozoites at the moment of reproduction.

Archivos Españoles de Pediatría, Madrid

11: 193-256 (April) 1927

*Abuses of Serum Therapy. A. Martinez Vargas.—p. 193.
Prevention of Congenital Syphilis. L. Herrera and R. Garelly.—p. 201.
Pulmonary Hydatid Cyst in a Child. F. González Beltrán.—p. 218.

Fatal Abscesses Caused by Irrational Serum Therapy.—Martinez Vargas describes several cases in which the empirical use of serums was followed by disastrous results. At the necropsies at the Barcelona Medical School, multiple internal abscesses have been found on several occasions after unjustified injections of serums. A child had mild lobar pneumonia. The physician used serum. Two abscesses developed, followed by a period of illness and ending fatally a few months later. At necropsy an abscess was found in the brain and another in the region of the right kidney. Martinez warns that "the use of serums merely in accordance with therapeutic analogy must be discarded, since the remedy may prove worse than the disease."

Lisboa Médica, Lisbon

4: 1-52 (Jan.) 1927

Sterility of Tubal Origin. E. Guedes Teixeira.—p. 1.
Basal Metabolism in Exophthalmic Goiter. M. Rosa.—p. 8.
*Ultraviolet Rays in Treatment of Diphtheria Carriers. F. Formigal Luzes.—p. 15.
Dementia Praecox and Schizophrenia. L. Pacheco.—p. 20.

Ultraviolet Rays in Diphtheria Carriers.—In the case reported by Formigal, several forms of treatment had failed to eradicate the diphtheria bacilli from the throat of a child, aged 7. They disappeared completely after nine ultraviolet irradiations.

Revista Mexicana de Biología, Mexico City

7: 21-53 (March-April) 1927

*Bibliography of Pinto. A. E. Reyes.—p. 21.

Bibliography of Pinto.—In connection with Ochoterena's investigations of pinto in Mexico, Reyes has compiled a list of references to the disease. The oldest are those of Alzate

y Ramírez (1787), Gómez (1789), Fuero (1797), Berecoechea (1811) and Corona (1811). Flores in his History of Mexican Medicine states that pinto was known to the Aztecs and quotes from a letter of Cortés to Charles V and from Hernández' Historia Plantarum. Hernández' description is, however, indefinite.

Semana Médica, Buenos Aires

34: 957-1016 (April 21) 1927. Partial Index

Diagnosis from Blood Stains in Situ. N. Rojas and C. S. Damel.—p. 957.
*Spontaneous Pneumothorax in an Infant. A. Segers.—p. 969.
*Autohemotherapy of Chancroid. F. J. Clusellas.—p. 972.

Spontaneous Pneumothorax in an Infant.—Segers adds one case to the five previously reported in the literature. His patient was 9 months old. The family history, a number of signs and the success of mercurial medication pointed to syphilis as a causative factor.

Autohemotherapy in Chancroid Buboes.—In 70 per cent of the twenty-three cases of chancroid described by Clusellas, autohemotherapy modified favorably the course of the buboes. Even when instituted in the suppurative stage, it prevents external rupture of the abscess. It always shortens the course of the disease and has no contraindications. In five further cases treated in the same manner, Ducrey's bacillus was not found in the pus of the buboes. The initial dose was 5 cc., later doses were increased to 10 cc. The injections were given in the buttocks, every other day, and varied in number from two to nine.

Archiv für exp. Pathologie und Pharmak., Leipzig

121: 1-130 (March) 1927

*Temperature and Drugs Inhibiting the Sympathetic. R. Rigler and E. Silberstern.—p. 1.
Acid-Alkali Balance After Exertion in Diseases of the Circulatory System. B. Groag and H. Schwarz.—p. 23.
*Blood Ammonia. D. Adlersberg and M. Taubenhaus.—p. 35.
Regulation of the Heat and Blood Sugar. E. Geiger.—p. 67.
Reaction of the Urine and Synthesis of Hippuric Acid. C. E. Koch. —p. 83.
Topographic Measurements of Blood Viscosity. H. von Gündell.—p. 89.
Action of Acetylene on the Circulation. H. Böllert et al.—p. 100.
*Enhancement of the Action of Drugs by Theobromine Derivatives. A. Fröhlich and E. Zak.—p. 108.

Temperature After Administration of Drugs Inhibiting the Sympathetic.—Rigler and Silberstern were able to lower the temperature of rabbits by injections of ergotoxin and ergotamine. The experiments succeeded after section of the thoracic, but not after section of the cervical spinal cord. Intracranial application required smaller doses. The drugs seem to paralyze the sympathetic part of the heat center. Part of their action is due to restriction of the chemical heat production.

Blood Ammonia.—In healthy subjects Adlersberg and Taubenhaus found less than 0.05 mg. of ammonia per hundred cubic centimeters of blood. Intravenous injection of larger amounts of acid sodium phosphate increased the ammonia concentration of the blood. Hyperpnea produced a similar result, which does not seem to be due to the alkalosis. Venous stasis did not change the ammonia content of the blood. Hyperammonemia occurs in grave prolonged hypoxemia. The blood ammonia was normal in all other pathologic clinical conditions with the exception of diabetic coma. Ligation of the hilums of both kidneys was followed by an increase in blood ammonia. This increase was more rapid than the increase in the substance from which it forms ("mother substance of ammonia").

Enhancement of the Action of Drugs by Theobromine Derivatives.—Fröhlich and Zak injected frogs with an isomer of theobromine. In these animals they induced spasms with sulphonated acid dyes, such as acid fuchsin and phenolsulphonphthalein, in doses that would not ordinarily have proved toxic. The central nervous system of these frogs contained a considerable amount of the dye. None was found in the brain or spinal cord of controls that were injected with the dye alone. The action of morphine and magnesium was similarly enhanced in frogs, rabbits and cats, and a fluorescent dye and potassium ferrocyanide spread faster in animals treated by the theobromine isomer than in controls. The authors regard this as evidence of more rapid metabolism of fluids and increased permeability of tissues in such animals.

121: 131-258 (March) 1927

*Rôle of the Liver in Intermediary Metabolism and Excretion. D. Adlersberg and E. Róth.—p. 131.
Epinephrine Content of the Blood. H. Schlossmann.—p. 160.
*Cinchophen Bile. G. Taubmann.—p. 204.
Catalytic Action of Irradiated Cod Liver Oil. B. Schimkus.—p. 230.
The Liver in Anaphylaxis. D. Louros.—p. 238.
"Cholesterol and Action of Insulin." H. Lange and R. Schoen.—p. 245.
"Pyrogenic Substances." F. B. Seibert.—p. 247.
Action of Iodides on the Protein and Sodium Chloride Content of the Blood. A. Slauck.—p. 250.

Rôle of the Liver in Intermediary Metabolism and Excretion.—Adlersberg and Róth confirm the observation that the normal bile of rabbits is practically sugar-free. This is true even with marked experimental hyperglycemia. Phlorhizin causes a glycocholia (appearance of dextrose in the bile) constantly, if it is administered to a hyperglycemic animal. Injection of bile salt does not lower the concentration of sugar in bile. Ergotamine has no influence on phlorhizin glycocholia, although it inhibits the simultaneous glycosuria.

Cinchophen Bile.—Taubmann injected dogs with derivatives of cinchophen. Cinchophen was partly eliminated by the bile. Such bile does not form an emulsion of fat as easily as does normal bile. It inhibits digestion of fat as well as of carbohydrates.

Archiv für die gesamte Physiologie, Berlin

216: 281-436 (April 8) 1927

Action Current of Nerves. H. Rosenberg.—p. 300.
The Spleen, Blood Volume and Blood Composition. E. Abderhalden and G. Roske.—p. 308.
*Insulin, Dextrose and Respiration of Surviving Spinal Cord. H. J. Wolf.—p. 322.
Glycogen Synthesis in Stimulated Denervated Muscle. A. Hoffmann and E. Wertheimer.—p. 337.
*Internal Secretion and Pregnancy. F. Schütz.—p. 341.
"Lock" of Striated Muscle. G. Lehmann.—p. 353.
High Altitudes and the Animal Organism. E. Abderhalden et al.—p. 362.
*Psychic Behavior of Rats on Different Diets. E. Abderhalden and E. Wertheimer.—p. 396.
Inorganic Salts and Contractibility of Muscles. R. Höber.—p. 402.
*Secretion of Glomeruli. R. Höber and E. Mackuth.—p. 420.
Reflexes in Decerebrate Animals. E. Spiegel and R. Worms.—p. 432.

Insulin, Dextrose and Respiration of Surviving Spinal Cord.—Wolf found that simultaneous addition of dextrose and insulin increases the oxygen consumption of the surviving spinal cord of the frog, unless the concentration of insulin is too high.

Internal Secretion and Pregnancy.—Atony of the uterus during labor was observed by Schütz in thyroprival rabbits. In the young there was premature ossification of the epiphyseal centers. Abortion and death occurred in hyperthyroidized rats.

Psychic Behavior of Rats on Different Diets.—Abderhalden and Wertheimer found that rats fed chiefly on proteins developed increased spontaneous motility, were easily frightened and were inclined to attack. They were much more resistant to alcohol than rats fed chiefly on carbohydrates.

Secretion of Glomeruli.—The experiments of Höber and Mackuth were made on perfused frog kidneys. The secretion could be inhibited in a reversible manner and without change of the circulation by nitrogen, potassium cyanide or narcotics. The inhibition occurs even when the tubules are poisoned by mercuric chloride injected through the renal portal vein of the frog. This speaks for the existence of secretion—not of filtration—in the glomeruli. Perfusion of glomeruli with mercuric chloride inhibits not only the secretion of urine, but also the circulation of the perfusing fluid.

Beiträge zur klinischen Chirurgie, Berlin

138: 583-768, 1927

Rigid Hollow Splints. H. Braun.—p. 583.
*Bacteriology of Resection of Perforated Peptic Ulcer. H. Brütt.—p. 601.
*Bone Necrosis from Diminished Circulation. W. Müller.—p. 614.
*Experimental Bone Necrosis from Anemia and Pressure. H. Burckhardt. —p. 625.
Fat Content of Castrated Animals on Vitamin-Free Diet. F. Rost.—p. 647.
Tails in Human Beings. P. Rostock.—p. 657.
Treatment of Generalized Tetanus by Local Anesthetics. F. Mandl.—p. 663.
Regeneration in Free Transplantation of the Pancreas. G. Jorns.—p. 682.
Etiology of the So-Called Callous Ulcer of the Male Urethra. F. Reischauer.—p. 695.

Peptic Ulcer of Meckel's Diverticulum. K. Kleinschmidt.—p. 715.
The Myotoxin Theory and the Origin of Purulent Myositis. Y. Osawa and O. Tanaka.—p. 721.
Perirenal Hydronephrosis. E. Müller.—p. 733.
The Blood Pressure in Operations in the Upper Abdomen, Particularly Under Splanchnic Anesthesia. J. Kummer.—p. 742.
Surgical Treatment of Congenital Anal Atresia. A. Kutter.—p. 756.
Case of Primary Sarcoma of the Stomach. W. Dahs.—p. 764.

Bacteriologic Aspect of Resection of Perforated Gastric or Duodenal Ulcer.—For the first twelve hours after perforation, Brütt found the peritoneal exudate sterile or infected chiefly with green streptococci. Resection within this time is comparatively safe. When performed within the first six hours the mortality was 3.8 per cent in his patients under 45 years of age and in good general condition; when done between six and twelve hours after the perforation, it was 14 per cent. After twelve hours, colon bacilli and hemolytic streptococci are present and the mortality rose; in such cases, a short, simple operation would probably be safer. The permanent results from resection were better, in his experience, than from gastro-enterostomy.

Necrosis of the Intermediate Lamellae from Diminished Circulation.—Müller studied the bone in four cases of thigh amputation for arteriosclerosis, in which the gangrene was limited to the toes but distinct signs of impaired circulation were present in the rest of the extremity. Even in segments in which general tissue necrosis was absent, he found necrosis of the bone cells. This necrosis was limited to the intermediate lamellae.

Bone Necrosis from Anemia and Pressure.—Burckhardt wound an elastic band as tightly as possible around the right foreleg of young rabbits and let it remain for various lengths of time up to more than twelve hours. The animals were killed from sixteen to forty-seven days after the procedure and the bone was examined. The special sensitiveness of the bone to injury was demonstrated, in that extensive bone necrosis was found long after all traces of injury in the soft parts had disappeared. The necrosis involved entire areas of bone, not merely individual trabeculae or layers. Where the bone was injured, but not killed, regeneration had apparently set in immediately or very soon after removal of the constriction. Regeneration was seen only, however, in places where the marrow had shared in the injury. The articular cartilage was entirely normal in all cases, even when the bone was totally necrotic and the soft parts had suffered irreparable injury. Epiphyseal cartilage proved more resistant than bone, but less so than articular cartilage; the lesions were always situated near the zone of ossification.

Biochemische Zeitschrift, Berlin

183: 1-244 (March 28) 1927

Urease. H. von Euler and E. Brunius.—p. 1.
*Precipitation of Serum Proteins by Acids and Metal Salts. L. Lorber.—p. 16.
Blood Sugar and Gas Metabolism After Various Carbohydrates. K. Schirlitz.—p. 23.
*Determination of Serum Calcium. L. Pincussen and P. Schimmelpfeng.—p. 42.
Biologic Action of Wiesbaden Water. K. Harpuder.—p. 45.
Action of Ferro-Ions and Mango-Ions on Yeast. K. Harpuder.—p. 58.
Radiometric Microanalysis. R. Ehrenberg.—p. 63.
Radiometric Microanalysis of Dispersity. R. Ehrenberg.—p. 68.
Mastic Sol and Proteins. K. Hotta.—p. 72.
Mineral Metabolism in Experimental Tetanus. J. M. Krinizki.—p. 81.
Serum Tryptase. O. Steppuhn and Z. Utkin-Ljubowzow.—p. 90.
Blood Proteases. L. Utkin-Ljubowzow.—p. 103.
Vitamin Content of Wheat and Rye Germs. A. Scheunert.—p. 113.
Autolysis. P. Rona and E. Mislowitzer.—p. 122.
*Condition of Chlorophyll. K. Noack.—p. 135.
Action of Iron in Assimilation of Carbon Dioxide by Green Plants. K. Noack.—p. 153.
*Lactic Acid Formation from Fermentable Hexoses in Muscle Extract. O. Meyerhof.—p. 176.
*Enzyme Forming Lactic Acid in Muscle. K. Meyer.—p. 216.
*Limits of Usefulness of Nessler's Reagent. B. Sjollema and L. Seekles.—p. 240.

Precipitation of Serum Proteins by Acids and Metal Salts.—Lorber found that addition of 1 cc. of a one hundred and sixtieth normal acid to 0.2 cc. of serum brings its proteins into the iso-electric state (maximum precipitation) regardless of the hydrogen ion concentration of the acid. Acetic acid and hydrochloric acid produced only a difference in the shape of the curve of precipitation; the maximum was the same. The salts of heavy metals act similarly when equivalent amounts are employed. This is apparently due to precipitation of the metal by the titratable alkali of the serum, which is thus bound.

Determination of Serum Calcium.—Pincussen and Schimmelpfeng found that the Kramer and Tisdall method for determination of serum calcium gives incorrectly low results, unless the action of ammonium oxalate is prolonged over twenty-four hours.

Condition of Chlorophyl.—Noack concludes from his investigations that the condition of chlorophyl in the living plant should be regarded as adsorption of the pigment in a monomolecular layer on the protein of the chloroplast.

Lactic Acid Formations from Fermentable Hexoses in Muscle Extract.—Meyerhof investigated the action of the soluble lactic acid forming enzyme of muscles. It splits polysaccharids (glycogen and starch) much better than fermentable hexoses. With addition of an activator obtained by precipitation of autolyzed yeast with alcohol, the hexoses are rapidly changed, one half into lactic acid, one half into an ester of phosphoric acid. On the contrary, the fermentation of glycogen or starch yields at first much more hexosediphosphoric acid than lactic acid.

Enzyme Forming Lactic Acid in Muscle.—Meyer attempted to purify the components of the enzymatic system which produces lactic acid. A muscle extract freed by dialysis from the co-enzyme requires for action the presence of a carbohydrate, of the co-enzyme and of inorganic phosphate.

Limits of Usefulness of Nessler's Reagent.—Sjollema and Seekles draw attention to the fact that the usual incineration methods do not always change the nitrogen completely into ammonia. Other nitrogen bases, such as methylamine and diamethylamine, do not stain Nessler's reagent. The presence of caffeine, theobromine or creatine causes large errors, if Nesslerization is used.

Deutsche medizinische Wochenschrift, Berlin

53: 865-906 (May 20) 1927

Vertigo. E. Meyer.—p. 865.
*Action of the Ovarian Hormone on the Mammary Gland. E. Laqueur et al.—p. 867.
Psychotherapy. Gaupp.—p. 868. C'en.
Epidemic Encephalitis and Herpes. S. Schoenborn.—p. 870.
Climatic Treatment of Tuberculosis. M. Levy.—p. 872.
*Intravenous Injection of Pilocarpine in Postoperative Retention of Urine. H. M. Hinrichsen.—p. 874.
The Operating and Delivery Rooms. W. Beuthin.—p. 875. C'en.
Complement Fixation with Simple Fats. J. E. Wolf.—p. 876.
Epilepsy. E. Siemerling.—p. 877.
Percutaneous Administration of Virulent Tubercle Bacilli. H. Koopmann.—p. 880.
*The Stomach and Intestines Before and After Syncope. J. Tugendreich and S. Schereschewsky.—p. 881.
Roentgen-Ray Study of Hypersecretion. H. Dressen.—p. 881.
Familial Grave Juvenile Diabetes. M. Landsberg.—p. 882.
*Monocytic Tonsillitis or Malignant Diphtheria? E. Koenigsberger.—p. 883.
*Gynecomasty After Prostatectomy. R. Oppenheimer.—p. 883.
Treatment of Flat Foot. Braatz.—p. 884.
Ophthalmology in 1926. P. Junius.—p. 885.
Indemnity Neuroses. M. Levy-Suhl.—p. 887.
Training of Laboratory Technicians. E. Hoffstaedt.—p. 888.
Medical Thinking. Goldscheider.—p. 889. C'td.

Action of the Ovarian Hormone on the Mammary Gland.—Laqueur, de Jongh and Tausk injected the ovarian hormone into rats. It stimulated the development of the mammary gland in both sexes.

Intravenous Injection of Pilocarpine in Postoperative Retention of Urine.—In postoperative retention of urine, Hinrichsen waits till the bladder is about three fingerbreadths above the symphysis. He then injects intravenously 0.01 Gm. of pilocarpine hydrochloride. He reports success in all his thirty-eight cases. A second injection was rarely necessary. The injection should be made slowly (one-half to one minute).

The Stomach and Intestine Before and After Syncope.—Tugendreich and Schereschewsky observed acute atony of the stomach, setting in just before the patient fainted. Similar transient atony of the colon was noted in another patient, immediately after recovery from collapse.

Monocytic Tonsillitis or Malignant Diphtheria?—Koenigsberger believes that the lethal cases of monocytic tonsillitis described by Haken were, in reality, malignant diphtheria.

Gynecomasty After Prostatectomy.—Oppenheimer reports two cases of gynecomasty which developed after prostatectomy.

Klinische Wochenschrift, Berlin

6: 881-928 (May 7) 1927

Degeneration Psychoses. G. Ewald.—p. 881.
*Synthalin in Children. R. Priesel and R. Wagner.—p. 884.
Epinephrine Reaction. E. Kylin.—p. 889.
*Uncultivable Virus of Typhoid. E. Gildemeister and K. Herzberg.—p. 890.
Changes of the Shape of the Stomach. I. Zollschan.—p. 892.
Blood Groups in Upper Silesia. Groetschel.—p. 895.
Tonsillectomy in Peritonsillar Abscess. H. Leicher.—p. 896.
*Perna Disease (Chlorine Acne). Teleky.—p. 897. C'en.
Roentgen-Ray Treatment of Peptic Ulcers. T. Bársony and L. von Friedrich.—p. 901.
Source of Error in Wassermann Reaction. E. Bernhardt.—p. 902.
Proteins as Cause of Toxic Symptoms. R. Freund.—p. 903.
Spots on the Skin and Teeth. Leven.—p. 904.
Congenital Syphilis and Nervous and Mental Diseases. F. Jahnel.—p. 906.
Biology of Mammalian Epididymis. T. von Lanz.—p. 909.
*Insulin in Diabetes Insipidus. L. Villa.—p. 926.

Synthalin in Children.—Priesel and Wagner tried synthalin in children. Small doses (10 mg. twice daily) were without any effect. Larger doses always produced toxic symptoms.

Uncultivable Virus of Typhoid.—Gildemeister and Herzberg repeated on a new material Friedberger and Meissner's experiments on the production of a typhoid ("cryptantigenic") virus which would be transmissible in animals but otherwise not cultivable. They failed to confirm the results of these investigators.

Perna Disease (Chlorine Acne).—Teleky concludes that the grave acne observed in workers handling a chlorinated naphthalin ("perna") is due to the chlorine.

Insulin in Diabetes Insipidus.—It is believed by Villa that the hyperchloremic is the only form of diabetes insipidus in which insulin reduces diuresis.

Medizinische Klinik, Berlin

23: 707-746 (May 13) 1927

Social Welfare Work. A. Gottstein.—p. 707.
Toxicoses of Pregnancy. R. Benda.—p. 710.
Occult Bleeding. E. Lauda.—p. 713.
Renal Calculus in Double Pelvis. M. Zondek.—p. 717.
Prerequisites for Successful Psychanalysis. B. Hembrecht.—p. 718.
Synthalin and Insulin Treatment of Tuberculous Diabetic Patients. A. Abraham.—p. 720.
"Pathogenesis of Peptic Ulcers." L. Jarno.—p. 724.
Reply. F. Reiche.—p. 724.
*Insulin and Dextrose as Antidote of Cyanogen. S. Puder.—p. 74.
Substitutes for Camphor. A. Beutel.—p. 726.
Injury of the Breast and Tumor. W. Brandis.—p. 279.
Survey of Obstetrics. W. Liepmann and G. Müggenburg.—p. 730.
Asthma and Tuberculosis in Relation to Climatic Allergens. Vollbracht.—p. 745.

Insulin and Dextrose as Antidotes of Cyanogen.—Puder found with Szolnoki and Erdös that 4 Gm. of dextrose per kilogram of body weight protects a rabbit against 3 mg. of cyanogen per kilogram of body weight. Only tachypnea and lowered temperature were observed, while the control was dead in five minutes. They also found that 20 units of insulin injected ten minutes before the administration of 3 mg. of cyanogen per kilogram of body weight protects the animal. Its temperature, however, was lowered considerably.

23: 747-782 (May 20) 1927

Mongoloid Degeneration. W. Weygandt.—p. 747.
Classification of Arthropathies. E. Maliwa.—p. 750.
Treatment of Inflammations of the Adnexa. W. Baer.—p. 752.
Extension of Tuberculosis from the Lung to the Thoracic Wall. G. Simon.—p. 753.
*Treatment of Leukorrhea. Hartog.—p. 756.
Sedimentation Test in Jaundice. G. Katz and P. Radt.—p. 760.
Foot and Back Support for Bed-Ridden Patients. G. Boysen.—p. 764.
Expert Testimony. Von Schnizer.—p. 766.
Abdominal Pains in Children. H. Baer.—p. 767.

Treatment of Leukorrhea.—Hartog had good results with the old silver nitrate ointment in treatment of vaginal discharge. He applies the ointment on a tampon and leaves it for twenty-four hours in the vagina. The treatment may be repeated four or five times at three day intervals. The composition he recommends is: argenti nitras, 0.3 Gm.; balsamum peruvianum, 3 Gm.; adeps lanae, 3 Gm.; petrolatum to 30 Gm.

Münchener medizinische Wochenschrift, Munich

74: 747-794 (May 6) 1927

Endocrine Diseases and Roentgen-Ray Diagnosis. K. Käding.—p. 747.
Problems of Gastroscopy. H. Hohlweg.—p. 751.
Sarcoma from Repeated Injuries. B. Martin.—p. 753.
Determination of the Output of the Heart. J. Kaup and A. Grosse.—p. 755.
Culture of Bacilli of the Typhoid Group from the Stool by Nissle's Method. W. Mann.—p. 759.
Arsphenamine-Resistant Syphilis. R. Notthaas.—p. 761.
Agranulocytic Angina. C. Hirsch.—p. 762.
Carbohydrates of Infant Foods. B. Bleyer.—p. 765.
Synthetic Ephedrine. H. Petow and E. Wittkower.—p. 767.
Digitalis Treatment of Chronic Diseases of the Heart. Jonas.—p. 768.
Injuries from Silkworm Sterilettes. Peters.—p. 770.
*Treatment of Corns by Injection. Pust.—p. 770.
Technic of Intravenous Injections. V. Nagel.—p. 770.
Scrotal Support for Bed-Ridden Patients. F. Dietel.—p. 771.
"A Pathologic Skin Reflex." H. Malten.—p. 771.
Campaign Against Typhoid. Drenkhahn.—p. 771.
A Physician's Thoughts on Medicine. A. Bier.—p. 772.
Alexius Nikolajewitsch Bach. A. Dworetzky.—p. 776.
Sexual Life in China. A. Hartmann.—p. 777.

Treatment of Corns by Injection.—Pust injects with alcohol the nerves supplying the terminal phalanx. The pain disappears and the corn does not grow again, if wide shoes are worn.

Zeitschrift f. d. ges. experimentelle Medizin, Berlin

55: 1-286 (April 28) 1927

*Bean Pod Tea in Diabetes. E. Kaufmann.—p. 1.
*Serum Calcium. P. Meglitzky.—p. 13.
Staining of Capillary Endothelium. H. Heimberger.—p. 17.
Vagotropic Action of Atropine. A. J. Smirnow and W. F. Schiroky.—p. 24.
Lowering of Blood Pressure in Paroxysmal Tachycardia. J. Bouckaert.—p. 35.
Epinephrine and Motility of the Stomach and Intestine. W. Weitz and W. Vollers.—p. 45.
*Biology of Cancer. F. Silberstein et al.—p. 56.
*Insulin Treatment of Cancer. F. Silberstein et al.—p. 78.
The Alkali Reserve and Digestion. W. Radzimowska and W. Iwanow.—p. 103.
Blood Enzymes and Digestion. W. Iwanow and I. Basilewitsch.—p. 107.
Skin Reactions After Irradiation. S. Kaplansky and S. Soloweitschik.—p. 111.
Production of Toxic Substances in the Kidney. O. Galehr and T. Ito.—p. 115.
Manoilow's Reaction. A. J. Kusnetzow.—p. 132.
Sugar Metabolism in Encephalitis. A. von Fejér and G. Hetényi.—p. 143.
Acid-Base Equilibrium in Neurotic Respiratory Tetany. F. Mainzer.—p. 150.
*Localization of Disturbances of the Awaking Condition. E. A. Spiegel and C. Inaba.—p. 164.
Consciousness and the Problem of Sleep. E. A. Spiegel.—p. 183.
Nitrogen Metabolism After Extirpation of the Liver. W. M. Wesselkina.—p. 198.
The Kidneys and Metabolism in Fatigue. A. P. Goldberg and M. W. Lepskaja.—p. 214.
*Caffeine as Heart Tonic. A. M. Preobraschensky.—p. 226.
Significance of the Sedimentation Test. G. Frenckell and I. Wyssotsky.—p. 239.
Sensitiveness to Pituitary Extracts in Hyperthyroidism. A. Herzum and J. Pogány.—p. 244.
*Action of Pancreatic Extract and of Insulin on Blood Sugar. J. T. Kusnetzoff.—p. 249.
The So-Called Reversion of Hemolysis. G. Endres.—p. 266.
Coagulation of Human Serum by Heat. W. Müller.—p. 271.

Bean Pod Tea in Diabetes.—Having obtained encouraging results from experiments on rabbits, Kaufmann advises his patients to pour four cupfuls of water over one cupful of the pods and stems of beans (phaseolus vulgaris and multiflorum) that are nearly ripe. After standing over night, the mixture should be boiled for ten minutes and the fluid drunk instead of tea. The author believes that it diminishes glycosuria and acidosis. An extract in brandy is pleasanter to take, but the concentration of the active substance is not sufficient.

Serum Calcium.—Meglitzky observed increase in blood calcium in starving animals. Nephrectomy raised the level for a day or two, but a rapid decrease followed. Association of mercuric chloride poisoning and splenectomy lowered the blood calcium. It was always low shortly before death. In these experiments, the changes in the cholesterol concen-

tration of the blood ran contrary to the changes in the calcium concentration.

Biology of Cancer.—Silberstein, Freud, Révész and Schneid publish the protocols of their experiments on the influence of insulin on tarred mice. To a considerable extent it protects them against the development of cancer. The results were improved by combination of insulin with dioxyacetone.

Insulin Treatment of Cancer.—Silberstein, Freud and Révész received the impression that under insulin treatment cancer may come to a standstill and become operable In smaller tumors local injections exerted a favorable influence.

Localization of Disturbances of the Waking Condition.—By puncturing the thalami, Spiegel and Inaba induced in dogs a condition of sleepiness, which persisted for weeks.

Caffeine as Heart Tonic.—Preobraschensky concludes that administration of caffeine is rational in disturbances of conduction. Combination with digitalis may also be advisable, since it counteracts to some extent the toxic effects of the latter drug.

Action of Pancreatic Extract and of Insulin on Blood Sugar.—Kusnetzoff ground the pancreatic glands of cats, added sodium bicarbonate and boiled the mixture. The aqueous extract, combined with an alcoholic extract from the precipitate, increased glycolysis of blood in vitro and lowered blood sugar when administered by mouth. In both these respects it differs from insulin. Besides this, it is resistant to alkali.

Zeitschrift für Hygiene und Infektionskrankh., Berlin

107: 265-486 (April 29) 1927

*Vitality of Scarlet Fever Streptococci. H. M. von Jettmar.—p. 265.
Anaerobes of the Human Intestine. W. Gusartschik.—p. 288.
The Omentum After Intraperitoneal Infection with Tubercle Bacilli. P. Schmidt-Weyland.—p. 295.
*Remote Effects of Alcohol on Basal Metabolism. M. Zahn.—p. 304.
Immunization Against Dysentery. L. Otten and L. Kirschner.—p. 314.
*Reticulo-Endothelial System and Chemotherapy. C. W. Jungeblut.—p. 357.
One-Cell Culture. W. Levinthal.—p. 380.
*Tuberculous Infection with Minimal Amounts of Bacilli. W. Levinthal.—p. 337.
*Peroral Immunization Against Pneumococci. R. Kimura.—p. 390.
Chemotherapy with Antimony Compounds. G. Bock.—p. 396.
Action of Chemotherapeutic Agents in Vitro. P. Papamarku.—p. 407.
Immunization with Pneumococci Dissolved by Sodium Taurocholate. H. Meyer.—p. 416.
Immunization with Killed Tubercle Bacilli. B. Lange et al.—p. 426.
Immunization of Mice Against Rabies. P. Schmidt-Weyland.—p. 436.
Localized and General Infection. A. Schmidt-Ott.—p. 441.
The Reticulo-Endothelial System and Chemotherapy. A. Feldt and A. Schott.—p. 453.
Infections with a Single Streptococcus of Animal Origin. E. Marx.—p. 472.
Infections with a Single Anthrax Bacillus of Animal Origin. G. Z. Martos.—p. 477.

Vitality of Scarlet Fever Streptococci.—Hemolytic streptococci were obtained by Jettmar from all his 120 patients with scarlet fever. The cultures or the pharyngeal mucus dried on gauze and kept in a dark room contained viable streptococci for more than six months and produced the Dick toxin.

Remote Effects of Alcohol on Basal Metabolism.—Zahn found a moderately increased metabolism when making the test nine or ten hours after administration of from 80 to 100 Gm. of alcohol in various forms.

The Reticulo-Endothelial System and Chemotherapy.—Jungeblut injected india ink into one series of mice and in others he extirpated the spleen. The results of infection with recurrens spirochetes or with trypanosomes were graver in these animals than in the controls. Neosilverarsphenamine and Bayer 205, used respectively, in these infections, did not cure the animals in doses which where successful in the controls.

Tuberculosis Infection with Minimal Amounts of Bacilli.—Using from one to three tubercle bacilli isolated from a fresh culture Levinthal successfully infected three out of four guinea-pigs.

Peroral Immunization Against Pneumococci.—Large doses of killed pneumococci administered by mouth protected even adult mice against one hundred times the lethal dose of living germs. The immunization was effected more easily in young mice.

Zeitschrift für Kreislaufforschung, Dresden

19: 345-376 (May 15) 1927

Heart Rhythm in Cheyne-Stokes' Breathing. R. Fischer.—p. 345.

Zentralblatt für Chirurgie, Leipzig

54: 705-768 (March 19) 1927

Phlegmons of the Large Intestines. F. Otto.—p. 707.
Circumscribed Cavernous Hemangioma of the Capsule of the Knee-Joint. R. Bertelsmann.—p. 710.
"Palliative Resection" of Peptic Jejunal Ulcer. J. Koch.—p. 711.
Amputation Below the Knee. A. Lehrnbecher.—p. 714.
An Inlay for Treatment of Flat-Foot. E. Schneider.—p. 715.
Haglund's Roentgen Ray Anomaly of the Patella. L. Peterson.—p. 719.
Operative Closure of Artificial Anus. M. Kappis.—p. 721.
*Late Complication of Operation for Inguinal Hernia. B. Frankenberg.—p. 723.
*Carcinoma or Inflammation? H. Nölle.—p. 724.

A Late Complication of Operation for Inguinal Hernia.—Frankenberg records a case in which the bladder wall was included in a silk ligature used to close the inguinal canal in an operation for hernia. A diverticulum with stone formation resulted. The first symptoms, painful and frequent micturition, appeared six months after the operation. The condition was finally (after four years) diagnosed by cystoscopy and rectified by operation.

Carcinoma Developing Under the Picture of Inflammation.—The lesion described by Nölle began as a slight eruption on the left breast; two or three months later the entire breast was swollen and hard, the overlying skin red and edematous. The patient, a hospital nurse, now first sought medical advice. Fever was not present nor were the glands swollen. Biopsy resulted in the diagnosis of Paget's disease. Radical operation was out of the question because of the extent of the skin involvement. The lesion was treated as an inflammation, with autohemotherapy, and intensive roentgen irradiation was also given. These measures held it in check for a long time. A sudden extension of the process took place under the picture of erysipelas erythematosum, initiated by a chill and high fever, with itching and redness of the hitherto unaffected breast. The redness was succeeded by the appearance characteristic of cancer en cuirasse. Later, bone metastases developed. Death took place a year and a quarter after the onset.

Zentralblatt für Gynäkologie, Leipzig

51: 641-704 (March 12) 1927

*The Reticulo-Endothelial System in Pregnancy. R. Benda.—p. 642.
*Explantation of Placenta and Decidua. K. Heim.—p. 653.
Lactic Acid in the Cerebrospinal Fluid in Eclampsia. E. Zweifel and R. Scheller.—p. 655.
Cirrhosis of the Liver and Pregnancy. L. Kraul.—p. 663.
Local Eosinophilia in Carcinoma. W. Lahm.—p. 669.
Habitual Breech Presentations. W. Reiprich.—p. 673.
Hastening the Onset of Labor. L. Recasens.—p. 680.
Rectal Analgesia in Obstetrics. N. Bloch.—p. 682.
Recurrent Double Pregnancy in a Duplex Uterus. O. Plümecke.—p. 688.

Biologic Importance of the Reticulo-Endothelial System in Pregnancy.—Benda believes that the reticulo-endothelial system has an important detoxifying function in pregnancy, during the exercise of which its cells frequently suffer injury. As a rule, they readily recover and continue to function, but they may fail to do so, and this failure is, in his opinion, the cause of toxicosis.

Explantation of Placenta and Decidua.—As culture medium, Heim used equal parts of fresh human plasma and hen plasma with the addition of human or chicken embryonal extract. The incubation time was from two to five days, the temperature 39 or 37.5 C. The two attempts with extra-uterine chorion were successful; there were a number of failures in attempts with the uterine placenta. However, there were two cultures of chorionic villi of the second month in which growth was as luxuriant as in the extra-uterine material. The culture of decidua from the second month was successful; this is the first time, in Heim's knowledge, that decidua cells have been cultivated.

Zentralblatt für innere Medizin, Leipzig

48: 505-528 (May 21) 1927

Lavage of the Esophagus in Cardiospasm. W. Sternberg.—p. 506.

Irkutskiy Meditsinskiy Jurnal, Irkutsk

5: 5-150 (Jan.-April) 1927. Partial Index

Influence of Various Occupations on Woman's Organism. M. P. Bushmakina.—p. 33.
*Calcium in Treatment of Incontinence of Urine. A. A. Alektoroff.—p. 63.
The Blood Picture in Erysipelas. P. J. Kaminer.—p. 71.
*Immunity in Malaria Coinciding with Goiter. M. Shwartsman.—p. 85.

Calcium in Treatment of Incontinence of Urine from Vagotonia.—Alektoroff employed pilocarpine and atropine tests on twenty patients with incontinence of urine. The parasympathetic tonus was normal in those in whom the disturbance was due to organic lesions of the urinary organs. Hyperexcitability of the vagus nerve was manifest in cases in which organic lesions were absent. The treatment of patients with vagotonia consisted in intravenous injection of from 5 to 10 cc. of an 8 per cent solution of calcium lactate. The injections were repeated a day apart. After three months, two patients thus treated recovered completely.

The Immunity Question in Malaria Coinciding with Goiter.—Shwartsman's observations were made in the Lena section of Siberia, where goiter occurs in from 70 to 80 per cent of the population. In the last three years malaria has been imported from central Russia. Among nineteen patients with goiter and malaria, in six the malaria ran a favorable course and subsided under the action of quinine. In thirteen, the malaria resisted treatment, or presented frequent and severe recurrences. The facts tend to confirm the theory that deficiency of the thyroid impairs the defensive forces of the organism against malaria, or possibly enhances susceptibility to the infection.

Klinicheskaya Meditsina, Moscow

5: 275-344 (March) 1927. Partial Index

Application of Heat to the Liver and Elimination of Bile. G. E. Sorokin.—p. 296.
Fever in Cases of Biliary Calculi. F. P. Chekaloff.—p. 309.
*Oxygen Therapy in Epidemic Encephalitis. E. K. Sepp et al.—p. 318.

Oxygen and Permanganate in Treatment of Epidemic Encephalitis.—Three of eight patients who had epidemic encephalitis were treated with injections of oxygen; two with inhalations of oxygen and three with injections of potassium permanganate. About 300 cc. of oxygen was introduced beneath the skin of the hip and the injection was repeated at intervals of one day. The subcutaneous emphysema usually disappeared within two days. Three or four inhalations of oxygen were given three times each day, after meals. A dose of 1 Gm. of potassium permanganate in a 1 per cent solution was injected subcutaneously at intervals of one day. Fifteen injections of oxygen or of permanganate, or a six weeks' treatment with inhalations resulted in gain in strength and in amelioration of the disturbances of the vegetative system. The emotional activity and the motility improved. The changes in the blood consisted in increased concentration of hemoglobin and in appearance of atypic monocytes. Sepp and his co-workers assert that the treatment is able to avert infirmity if it is administered in the early stage of parkinsonism. It is without effect in cases in which stiffness is already present. In two cases with associated pulmonary tuberculosis, the condition grew worse under this treatment.

Russkiy Vestnik Dermatologii, Moscow

5: 113-224 (Feb.) 1927. Partial Index

*Cases of Lichen Planus Ruber in Moscow. A. P. Iordan.—p. 114.
Cases of Fox-Fordyce's Disease. F. V. Gintse.—p. 126.
Treatment of Arsphenamine Dermatitis with Roentgen Rays. L. S. Ginzburg.—p. 148.

Cases of Lichen Planus Ruber Observed in Moscow.—In recent years, Iordan says, lichen planus ruber has become more frequent in Moscow. The fact is apparently connected with the bad economic condition in the country. Eighty personal cases are reported, among them two in girls, aged 1½ and 10 years, respectively. Most of the patients were between 21 and 55 years old. The percentage of cases was the same in women as in men. The diffuse form of the lesion was present in fifty-seven cases, the localized form in the remainder. A familial form has never been observed. The disease developed usually in the winter. Disturbances of the nervous system are an important etiologic factor. In a few cases, the lesion appeared to be associated with local trauma. The influence of syphilis is indirect. Prolonged administration of arsenical preparations is the most effectual therapeutic measure. Mercuric iodide helps only in cases associated with syphilis. Under suitable treatment the prognosis is usually favorable.

Hospitalstidende, Copenhagen

70: 311-334 (April 7) 1927

*Paralytic Dementia and Its Connection with Antisyphilitic Treatment. J. C. Smith.—p. 311.
Ectopic Pregnancy. O. K. Svenningsen.—p. 324. C'td.

Paralytic Dementia and Its Connection with Antisyphilitic Treatment.—These investigations consist of a review of the case histories of patients admitted to the municipal hospital in Copenhagen between the years 1866 and 1925. Smith finds wide variations in the incidence of paralysis compared with the size of the population. During recent years it has diminished independently of the treatment of syphilis with arsphenamine. This is also true in Leipzig, Vienna and Rostock. This variation in frequency may be related to the frequency of syphilis but their incidence is not quite parallel, for in recent years paralysis has diminished in spite of an increase in syphilis. He fails to find any proof that arsphenamine therapy in syphilis is having the result of reducing the frequency of paralysis.

70: 335-358 (April 14) 1927

*Epilepsy with Chronic Epidemic Encephalitis. A. Wimmer.—p. 346.

Epilepsy with Chronic Epidemic Encephalitis.—This investigation of twenty-three cases of encephalitic epilepsy adds weight to the old notion that some of the true epilepsies are due to infectious brain diseases. Wimmer asserts that encephalitic epilepsy is caused by localized changes in the brain tissue, not by generalized toxin and metabolic disturbances, for researches indicate that the cerebral cortex seldom escapes involvement in chronic epidemic encephalitis. He further states that the degenerative process associated with the chronic inflammation might increase the tendency of the cortex to produce epileptiform seizures.

Ugeskrift for Læger, Copenhagen

89: 411-483 (May 19) 1927

Accidents from Electricity. E. von Holsetin Rathlou.—p. 391. C'td.
*Effects of Light on the Skin, Historically and Clinically Considered. C. Rasch.—p. 417. C'td.

Historical and Clinical Remarks on the Effect of Sunlight on the Skin.—Rasch reviews the historical development of the study of the effects of sunlight on the skin from the beginning of the last century to the present time. The so-called senile affections of the skin of the face may be developed by sunlight; such are pigment maculae, atrophic and achromatic changes, and local warty keratosis, sometimes followed by epitheliomatous formations. All these varieties were found on the face of an aged country woman but the temples and the regions around the parotid glands, which were always covered, were uninvolved.

89: 439-445 (May 26) 1927

Effect of Light on the Skin. C. Rasch.—p. 439. C'cn.
Strangulation-Ileus with Characteristic String-Formations from a Meckel Diverticulum. E. Thomsen.—p. 443.
Estimation of Blood Sugar. S. Priol.—p. 444.
Treatment of Epidemic Icterus. O. Olsen.—p. 444.

89: 455-482 (June 2) 1927

Fever in Ulcer of the Stomach or Duodenum. S. Bang.—p. 455.
*Use and Misuse of Pituitary Extract. E. Hauch.—p. 466.
A Case of Sprue in Denmark. J. E. Holst.—p. 471.

Use and Misuse of Pituitary Extract.—Since 1921, Hauch has employed small doses of pituitary extract, except in a few cases, such as rupture of the membranes in placenta praevia. As a rule he uses 0.2 cc.; sometimes not more than 0.1 cc., since in most cases 0.2 cc. acts just as well as 0.5 cc., and the risk of tetanic contractions is avoided. The effect is of shorter duration, but the dose may be repeated after an hour or longer. His opinion is, that the danger of pituitary extract will be diminished by employing small doses. It is necessary for the physician to stay by the patient as long as the effect of the pituitary extract lasts.